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COVER FOCUS

Data Center Preparedness

If a disaster were to strike, could your enterprise survive? How long would it take to get your network and essential equipment back online? We provide tips and advice to make sure you're prepared.

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The Next Generation Of Firewall Technology

Palo Alto Networks Knows The Ins & Outs Of Protecting Your Networks

by Marty Sems

ACCORDING TO NIR ZUK, founder and CTO of Palo Alto Networks (www.paloalto-networks.com), his company's products are the best on the market—a bold statement, to be sure. Spend some time listening to Zuk's reasoning, however, and you might have to admit that he makes some very valid points. Dive into your own research on Palo Alto's enterprise firewall technology, along with some due diligence on the state of the competition, and you could find yourself becoming the company's latest convert.

Changing Technologies

For one thing, Zuk says, SPI (stateful packet inspection) is dead. This might be easy to dismiss as mere hyperbole, except for the fact that Zuk was one of the original developers of SPI technology at Check Point Software Technologies.

The problem with stateful inspection, Zuk says, is that it focuses on ports and IP addresses. Ports are like main circuit breakers: too big and clumsy to use as filtering criteria when what matters is the activity, good or bad, flowing through them. IP addresses are also not tied to users, who can circumvent policy just by using a different device.

Instead, Zuk says, the answer is to focus on the user, the apps he's using, and what he's doing with each app, especially now that app vulnerabilities have become a favorite exploit. A block/allow toggle on port 80 isn't granular enough by far. Even blocking or allowing Facebook doesn't dig deep enough. Instead, the firewall must support policies that allow the user—no matter what computer he's using—to do business-related activities with Facebook, but not things that may leak corporate data or give malware a toehold.

And it's not just Facebook, or Twitter, or any other Web 2.0 app with corporate uses in addition to their admittedly time-wasting ones. There's SharePoint, WebEx, Dropbox, IM applications, P2P, and more.

The Next Generation

So what makes a firewall a next-generation firewall? First of all, Zuk says, it has to be from Palo Alto Networks. He laughs, but he's not completely kidding.



Identify The Real Thing

When you're in the market, you can easily tell a next-gen firewall from older technology, says Nir Zuk, founder and CTO of Palo Alto Networks (www.paloaltonetworks.com).

First, it should have a single, app-based policy instead of dual policies (app- and port/IP-based). Next, head to SharePoint, WebEx, or similar and see whether the firewall recognizes it by name instead of simply as Web

traffic. Test the firewall at the app level, not with a traditional "bit-blast" device.

And if the vendor lists different throughput speeds for each security component, such as IPS, DLP, AV, and the firewall (each of which may be tested with the rest of the components turned off), it's not integrated enough, Nir says; there should be one, all-inclusive throughput figure.

Like Palo Alto's App-ID technology, a next-gen firewall should center on apps, users, and actions, not port/IP (SPI). "It takes what you do [to secure] the Web and email and applies it to all apps," he says. Next, it must have anti-malware technologies that are fully integrated into the firewall at a very low level to avoid the latency of isolated components redundantly scanning the same content. Integration is also necessary because of the complexity of today's threats, says Mike Rothman, an analyst at and president of security firm Securosis (www.securosis.com).

Latency avoidance is critical, as the firewall must be fast enough to allow all company network traffic to pass through it with no loss of performance. That centralized control ideally includes cloud and mobile traffic, too. (In contrast, Zuk says, a typical UTM [unified threat management] solution is too slow for enterprise use because it's not

integrated well, although a good one would work fine for small to midsized companies.)

Each security component must be best-of-breed, Zuk says. In short, a collection of mediocrity does not a security solution make. A next-gen firewall must detect content running inside SSL encryption or using obfuscation techniques, and it must be built from the ground up on dedicated, specialized hardware.

It must also provide excellent visibility. Paraphrasing Zuk, you need to know what's happening on your network before you can set policies, and that's hard to do with most firewalls today. It must provide outstanding granularity, while at the same time offering high-level policy such as "no browser-based instant messaging on the network," Zuk says. Finally, it must be cost-effective with a low cost of ownership.

Zuk's overarching point is that firewalls need to evolve based on the threats networks face today.

Rothman agrees. Companies need to invest in technology that addresses what the bad guys are doing, he says, or they'll be disclosing breaches to their customers later on. ■



Nir Zuk, founder and CTO
of Palo Alto Networks


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News

■ The data that was once critical to your company's mission is now passé, and it's time to move it into **lower-cost storage for long-term archival**. Your mission: Get the data ready for the migration page 32

■ Dive into your own research on Palo Alto's **enterprise firewall technology**, along with some due diligence on the state of the competition, and you could find yourself becoming the company's latest convert page 1

■ ProQueSys FlowTraQ **network monitoring software**
now has an updated release that adds VLAN and
autonomous system support, enhanced sorting filter
options, and more..... page 31

■ **Buying Guide:** Unified Threat Management..page 33

Unified Threat Management page 34

■ You don't have to **compromise security** just because you have a low budget. Here, we'll explore some low-cost or free ways to get your enterprise on the right track..... page 36

■ ForeScout's CounterACT uses a patented Active-Response technology that gives data centers a 100% capture rate for **viruses and other malware** .. page 37

Chenbro has been developing **innovative enclosures** for about 30 years. R&D is the driving force behind Chenbro, and its clients include system integrators, OEM partners, and channel partners page 39

■ dtSearch has about 20 years of experience in searching data, and the newest version of **dtSearch Engine** (7.66) includes several features that enhance those that use dtSearch Engine's developer's API..... page 41

■ If you're looking to build a lightweight, **affordable desktop system** for work, the Giada MI-R880G mini-ITX motherboard is a great start to your build .. page 41

Data Center/IT Training Centers page 40

■ Numerous factors and strategies are involved in **creating more efficiency**, but experts believe that even little tweaks can make a big difference on overall consumption and operation page 42

■ Knowing how a supplier handles returns is an important factor in any purchase decision. Here are some guidelines to keep in mind as you **shop for refurbished equipment**..... page 43

Technologies such as virtualization and cloud computing let data centers quickly and inexpensively deploy new IT resources. But that quick and cheap mentality can cause a lot of damage if no one **thinks strategically about the long-term plan** page 44

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Federal incentives to spur the adoption and meaningful use of electronic health records appear to be bringing more healthcare providers on board, according to survey results from the American Hospital Association released by the National Coordinator for Health IT. Currently, 81% of hospitals plan to take advantage of federal payments and start using certified EHRs in quantifiable and qualifiable ways, with 65% planning to sign up by the end of the program's Stage 1 period next year. In comparison, 41% of doctors in office environments now aim for meaningful EHR usage, with 32.4% planning to enroll by 2012. Currently, 29.6% of primary care physicians use EHRs at least at a basic level—up about 50% since 2008.

According to the Security Threat Report 2011 from Sophos, 67% of respondents said they were spammed via social networks in December of last year. In addition, 43% were victims of phishing and 40% encountered malware in the same month. This is a significant rise compared to attacks by cybercriminals in December 2009. In that month, social network spam accounted for 57%, phishing reached 30% of respondents, and 36% received malware attacks. These statistics include both home and workplace users, which is why 59% of companies surveyed believe that social networking by end users could result in security breaches.

Time Warner announced plans to purchase NaviSite, a messaging and cloud service provider, for \$230 million or \$5.50 per share. Time Warner views the acquisition of NaviSite as another step toward expanding its enterprise-class offerings, taking advantage

of greater operational capabilities, and rapidly creating more managed service avenues for small and medium-sized businesses. NaviSite is home to 10 data centers and 570 global employees, with locations in the United States and the UK. The purchase gives Time Warner access to NaviSite's 1,200-plus managed service customers.

A Gartner survey of more than 2,000 CIOs concerning their budget plans found that organizations are emphasizing growth and keeping a close eye on cost and operational efficiencies. The 2011 CIO Agenda survey, which Gartner conducted from September to December 2010, found that overall, CIO IT budget projections for this year are globally flat, with a weighted average budget rise of 1%. Although IT budgets aren't expected to return to pre-recession levels, those experiencing budget increases this year outpace those reporting a cut by three to one. "The resource realities indicated in the 2011 CIO Agenda survey raise the urgency and importance of adopting new infrastructure and operations technologies, such as cloud services and virtualization," said Mark McDonald, head of research for Gartner Executive Programs, in a statement. "These technologies . . . are the top two technologies for 2011 and are well-suited for this budget reality, as they offer similar service levels at lower budget costs." During the coming four years, the number of CIOs who plan to have the majority of IT operating in the cloud or on SaaS technologies is expected to climb to 43% from the current level of 3%.

There's a federal mandate for U.S. healthcare providers to start implementing certified electronic medical records by 2015, and yet many

hospitals and health systems underestimate the cost and effort of making the transition, according to a survey of chief information officers by Accenture. "Achieving meaningful use compliance takes longer and costs more than CIOs expect," says a statement from Accenture. "This is due, in part, to the shift in thinking that the EMR journey requires." About half of U.S. hospitals may not make the 2015 deadline, the research firm says, which puts them at risk of Medicare-based penalties. Barriers include time to implement, need for more IT resources for support, and the cost of investments in new personnel and technology.



The number of wind power installations took a drop in 2010, due in part to uncertainty over the renewal of a 30% federal tax credit for investing in wind farms. Despite the falling prices of wind power technology, only 5,115 megawatts of wind power capacity were added in 2010 as opposed to 10,000 megawatts in 2009. This was also less than installations in 2007 and 2008. On the state level, Texas has the most wind power capacity at 10,085 megawatts; other big players are Iowa with 3,675 megawatts and California with 3,177 megawatts. Total U.S. wind capacity for 2010 was 40,180 megawatts, which is 15% higher than a year ago.

MBAN, or mobile body area networking, is a technology that was proposed by the FCC last year in its first national broadband plan, and now, both healthcare providers and aeronautic industry association members are advising the FCC to move forward with the plan. The MBAN radio spectrum creates a wireless body sensor network that would allow for remote monitoring of critically and chronically ill people using small portable wireless devices. The technology would let medical workers track the person's health status and give them the ability to take quick action in an emergency. The proposed plan also includes a few methods for centrally controlling the wireless healthcare devices.

This information provides a quick glimpse of current and historical stock prices and trends for 13 major companies in the technology market.

Company	Symbol	Year Ago	Jan. 20 \$	Feb. 3 \$	% change from previous issue
AMD	AMD	\$7.19	\$8.02	\$8.33	▲ 3.87%
CA Technologies	CA	\$21.58	\$25.46	\$24.69	▼ 3.02%
Cisco Systems	CSCO	\$23.16	\$20.77	\$21.91	▲ 5.49%
Dell	DELL	\$13.01	\$13.60	\$13.80	▲ 1.47%
Google	GOOG	\$526.78	\$626.77	\$610.15	▼ 2.65%
HP	HPQ	\$47.03	\$46.78	\$47.32	▲ 1.15%
IBM	IBM	\$123	\$155.80	\$163.53	▲ 4.96%
Intel	INTC	\$19.02	\$20.95	\$21.57	▲ 2.96%
McAfee	MFE	\$36.94	\$47.68	\$47.91	▲ 0.48%
Microsoft	MSFT	\$27.84	\$28.35	\$27.65	▼ 2.47%
Oracle	ORCL	\$23.11	\$32.31	\$32.99	▲ 2.1%
Red Hat Software	RHT	\$27	\$43.28	\$43.07	▼ 0.49%
Symantec	SYMC	\$16.93	\$17.81	\$17.95	▲ 0.79%

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[Central Ohio Cloud Computing User Group](#)

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[Central Ohio VMware Users Group](#)

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Feb. 17

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IT Companies Report Increased Business Confidence

The latest version of CompTIA's "IT Industry Business Confidence Index," which measures respondents' confidence in the economy, the IT industry, and their own companies, charted a score of 60 on a scale of 100—the highest point total since CompTIA began the index in June 2009. The global survey gauged the confidence of 1,118 IT companies from the United States and 10 other countries. The 60-point mark charted in December 2010 is up seven points from September 2010's index, and IT company execs are predicting another five-point increase in confidence through 2011's first half. Of U.S. IT companies, 45% indicate they plan to increase spending on new products and business lines, and 43% plan to up their technology-related spending, which marks a 10-point increase from September 2010. Hiring-wise, a third of U.S. companies report they'll increase staff in 2011's first six months. Globally, Brazil, India, and China are calling for 7.5% growth in IT industry revenue.

Security Report Shows Imbalance Between Stolen Data & Mules

The newest Cisco Systems security report highlights a gap between the amount of stolen bank account information and the number of "money mules" to whom fraudsters have access. According to the report, money mules are people that either knowingly move or are tricked into moving money from victims' bank accounts through their own accounts and then into third-party accounts that are usually located in another country. The report estimates that the ratio of stolen account information (acquired through phishing or hacking) to the number of mules could be as high as 10,000 to one. Over the course of the past year, a number of people were arrested in the United States and the UK on money mule charges.

New Leadership Structure Implemented At VMware

VMware announced changes to a handful of its leadership positions. Paul Maritz is now the CEO, and his title of president has been removed. Instead of having a lone president, four senior-level executives will be co-presidents of various areas. Carl Eschenbach is now co-president of customer operations, Richard McAniff is co-president of products, Tod Nielsen is co-president of the applications platform, and Mark Peek is co-president of business operations. All but Eschenbach will also retain their former titles: McAniff is still the chief development officer, Nielsen will remain COO, and Peek will continue to serve as CFO.

Microsoft Financial Results Beat Expectations

Thanks largely to sales of the popular motion-sensitive Kinect controller for Xbox, Microsoft was able to beat analysts' expectations for the

second quarter of its fiscal year 2011. Microsoft's net income fell to \$6.63 billion from last year's \$6.66 billion; however, sales for the quarter totaled \$19.95 billion, up from \$19 billion a year ago and ahead of the expected \$19.1 billion. The company's Entertainment and Devices division, which is where the Kinect controller came into play, reported sales of \$3.7 billion, up from \$2.38 billion during the same period one year ago. Microsoft's Business, Online Services, and Servers and Tools divisions all experienced growth, as well.

Scareware Vendors Settle With FTC

Apparently crime really doesn't pay, at least in the case of Marc D'Souza and his father, Maurice D'Souza, two top scareware vendors who were forced to settle a suit by paying \$8.2 billion to the FTC. The FTC says it will use the money to reimburse customers who purchased scareware applications that used deceptive advertising to falsely claim that viewers' computers were infected with malicious software, as indicated by bogus scans. The D'Souzas promised to remove the supposed malware with their anti-malware applications, sold for \$39.95 or more under such names as Winfixer, Drive Cleaner, and Anti-virus XP.

Oracle To Settle Government Kickback Charges

Oracle will pay the U.S. government \$46 million to settle charges that Sun Microsystems, which Oracle purchased last year, offered kickbacks in an effort to win government contracts. Between 1998 and 2006, Sun Microsystems and dozens of other IT equipment manufacturers and systems integrators were involved in the scheme. Six companies, including HP and IBM, have already settled their cases. In Sun's case, it gave consulting companies a payment each time they influenced a government agency to purchase a Sun product, according to the Department of Justice. The settlement also covers claims that Sun's 1997 and 1999 GSA Schedule contracts were defectively priced.

Verizon Acquires IaaS Cloud Computing Company

Verizon is expanding further into the cloud computing arena with its \$1.4 billion acquisition of Terremark Worldwide. Terremark is an infrastructure-as-a-service company that will help Verizon grow its "everything-as-a-service" philosophy. Verizon says it plans to operate the new unit as a wholly owned subsidiary retaining both the Terremark name and its current management team. Terremark, based out of Miami, has 13 data centers spread across the United States, Latin America, and Europe that will be added to Verizon's 220-plus data centers in more than 20 countries.



iPad Usage Gaining Ground In Enterprises

Apple's iPad is popping up in an ever-growing number of corporate businesses, says a recent survey conducted by Good Technology. The survey reveals that 28% of new device activations

by Good's mobile management customers, which include mostly large North American businesses, were for iPads during December 2010. The remaining device activations were for iPhones and Android devices, at 40% and 32%, respectively. The survey also shows that businesses are adopting tablets due largely to strong ROI and are also allowing workers to choose their preferred smartphones to use for business purposes because they can now more effectively manage the security of employee-owned devices.



Android Dominates Shipments Of Smartphones In Q4 2010

According to research firm Canalsys, Google is now the world's leading smartphone platform provider after a year-over-year increase in global market share from 8.7% to 32.9%—an astonishing 615.1% growth. Nokia has dropped to No. 2 with 30.6% market share (down from 44.4% at the same time last year), and Apple slid in at No. 3 with 16%, less than half that of Android. RIM and Microsoft round out the top five at 14.4% (down from 20%) and 3.1% (down from 7.2%), respectively. All other smartphone platforms combined accounted for 2.9% of the market, down from 3.4% a year ago.

Most P2P Files Come From Small Group Of Users

Researchers at Carlos III University of Madrid inspected 55,000 files on Mininova and The Pirate Bay, two of the most popular BitTorrent P2P operators, and determined that the majority of legitimate P2P file shares—typically copyright-protected content such as movies, music, and TV shows—come from a relatively small number of users. The team estimates that about 100 individuals are responsible for 66% of the illegally published content, and three out of every four P2P downloads come from the files this small group offers. The remaining portion of P2P uploads comes from malware creators uploading infected files and users who upload fake files on behalf of the copyright holders.

Mobile Data Traffic Forecast

Cisco recently released a report forecasting explosive growth in mobile data traffic by 2015. According to the firm, there will be a 26-fold increase in mobile data traffic over the next four years. By that time, Cisco expects there to be more than 5.6 billion personal mobile devices and 1.5 billion machine-to-machine mobile connections, which equates to about one mobile connection per person in the world. Other insights predict that mobile video will represent 66% of all mobile data traffic by 2015 and that mobile traffic from tablets will increase 205-fold by 2015. Additionally, the report says that the average mobile connection will go from accounting for 65MB of traffic per month currently to about 1.1GB of traffic per month in 2015.

STATS & FACTS

PROVIDING THE LATEST INSIGHT & INFORMATION FROM LEADING RESEARCH FIRMS

What Are You
Doing For The
New Year?

Have you set your priorities for 2011? If not, Info-Tech Research Group has six technologies you need to be at least considering this year. If you've already established your goals and priorities for the year, see how they stack up against Info-Tech's recommendations.

Social media. Its use in businesses is here to stay, Info-Tech reports, with larger organizations using social media to improve internal communications, employee-to-employee collaboration, team productivity, and knowledge sharing. IT's charge? Managing its use in a way that ensures privacy and integrity.

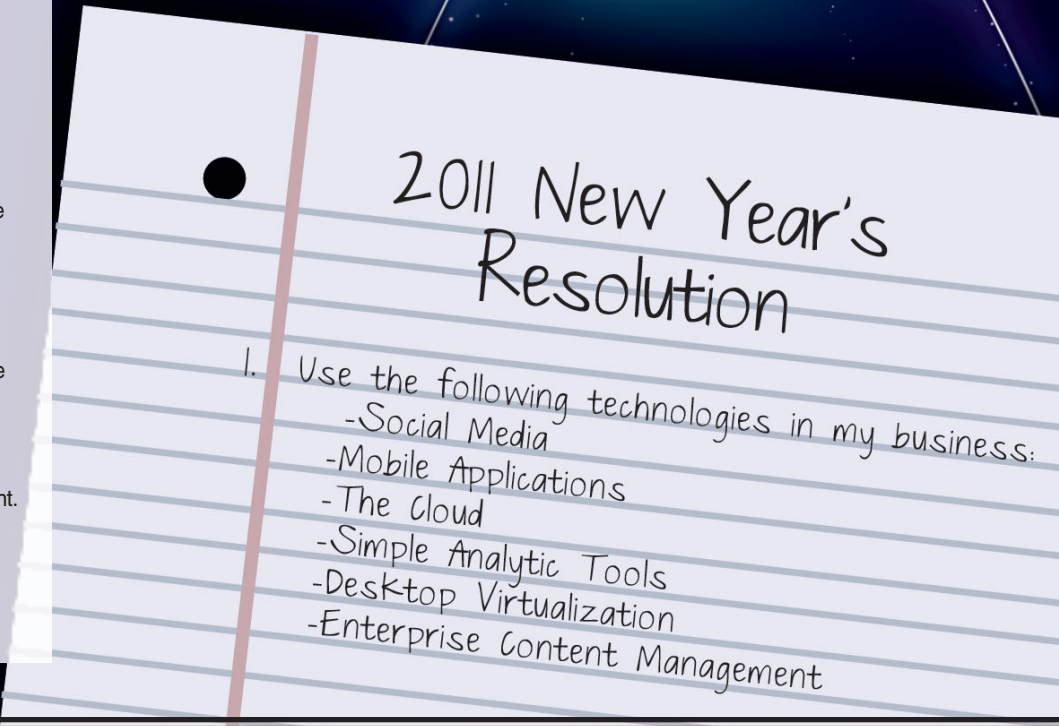
Mobile applications. They're "rapidly becoming the way to do business," Info-Tech says, and organizations are beginning to distinguish themselves with unique applications. IT needs to be sure it has the in-house expertise and developers needed for the new platforms.

The cloud. According to Info-Tech, "Business leaders will view cloud-sourcing as a business decision rather than a technology decision." When organizations need to expand IT services, the cloud can present lower-cost alternatives to in-house services, and business management will benchmark the cost and quality of in-house IT services against those available via the cloud.

Simple analytic tools. Such tools are proving to be a money-saving way to get the analytics a business needs without having to invest in a full business intelligence solution. That means more money for other IT initiatives, Info-Tech suggests.

Desktop virtualization. With this technology, workers can access their desktops from any computer. IT benefits from fast provisioning of new desktops and centralized application management.

Enterprise content management. Documents, emails, and video are growing in volume, Info-Tech reports, while at the same time increasing in business importance. IT needs a better way to efficiently store, control, and retrieve this content.



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PRODUCT RELEASES

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All products listed have been released recently, so use this section to get up-to-date with what's new on the market and to find products you need.

Manufacturers:
Do you have a new product that data center/IT managers would be interested in learning about?
Send your press release or product information to press@processor.com.

PHYSICAL INFRASTRUCTURE

■ Black Box ServSwitch Secure KVM Switches

Black Box announced a line of ServSwitch Secure KVM Switches. Designed with military-grade security in mind, the line includes two- and four-port models for both DVI and VGA, control and separation of two to four PCs connected through a single workstation, and integrated CAC (Common Access Card) readers on two of the VGA models.

■ DCB Network Power Switch NPS-01

DCB launched the Network Power Switch NPS-01, which lets users control AC power to any remote equipment via a Web-based or telnet session interface. The NPS-01 supports multiple remote functions, including on, off, or power cycling. The NPS-01 also features a Ping Test that users can initiate to determine the need for a power cycle. Pricing starts at \$295.

■ Optical Cable Axxess HD

Optical Cable released its Axxess HD structured cabling products for data centers. The end-to-end solutions cover floors to racks, cables to connectors, and copper to fiber networking. Products include HD fiber network solutions that use OCC's pre-terminated fiber-optic enclosures and cable assemblies and HD copper network solutions featuring QuadBox pre-term copper assemblies for CAT 6, 6A, and 5E.

■ Opto22 & Pulse Energy Web-Based Energy Monitoring & Management

Opto22 and Pulse Energy have partnered to help facility managers, building occupants, and executives gain the visibility and data needed to comprehend their energy usage, target problem areas, and cut costs. The partnership involves Opto22's OptoEMU Sensor energy-monitoring appliance and Pulse Energy's energy management software to connect users' metering devices, electrical panels, and equipment to provide related data over the Web and standard networks.

■ Server Technology CDUs

Server Technology released 18 CDUs (cabinet power distribution units) designed specifically for data centers. The units include three-phase, high-power CDUs with C19 outlets and 208V 50/60A basic and metered CDUs with circuit breaker protection. Each has unique features geared toward the specific needs of any data center.



■ Server Technology Sentry Power Manager 4.3.2

Server Technology announced enhancements for Sentry Power Manager 4.3.2. Main features include support for the company's Per Inlet Power Sensing CDUs and support for larger device deployments, advanced scheduling options, backups, outlet control, device discovery, and more. SPM 4.3.2 is a downloadable application that features better accuracy and FTP server functionality than previous versions and allows for automatic CDU firmware upgrades.

NETWORKING & VPN

■ Allot Service Gateway Sigma E

Allot announced the release of the Allot Service Gateway Sigma E, which supports 160Gbps of throughput and up to 8 million subscribers on a single platform. The SG-Sigma E is ideally suited to operators of 4G/LTE and fixed-mobile converged networks. Customers can deploy the SG-Sigma E on a pay-as-you-grow basis, enabling them to add capacity and services as needed.

■ Cisco 200 Series Smart Switches; RV220W Firewall; NSS300 Smart Storage Backup

Cisco announced the addition of small-business products for networking, security, and storage. The portfolio includes 200 Series Smart Switches, the RV220W network security firewall, and NSS300 Series Smart Storage backup. The switches start at \$287. The RV220W is available for \$363, and Cisco's Smart Storage starts at \$913.

■ Dell KACE K1000 Management Appliance

Dell KACE released the Dell KACE K1000 Management Appliance, which supports the FDCC (Federal Desktop Core Configurations) requirements. The appliance features the SCAP (Security Content Automation Protocol) to help meet compliance regulations. Dell KACE has also announced an update of the Dell KACE Firefox Secure Browser technology to protect against malware and viruses.

■ F5 Networks BIG-IP Access Policy Manager For Local Traffic Manager Virtual Edition

F5 Networks announced the F5 BIG-IP Access Policy Manager for Local Traffic Manager Virtual Edition, which is a high-performance access and security solution that delivers authentication, authorization, and accounting for virtual Application Delivery Controllers. Customers can deploy the offering on existing hardware alongside virtual servers that host VMware View desktops.

■ Flexera Software FlexNet Manager For Engineering Applications 14.2

Flexera Software released version 14.2 of FlexNet Manager for Engineering Applications. This version helps enterprises simplify server administration for FlexEnabled applications and helps IT personnel monitor and manage more than 20,000 engineering applications from several different vendors. The release also includes timed data aggregation, increased reporting performance, and integration with the FlexNet Manager Platform.

■ Flexera Software FlexNet Manager For Symantec

Flexera Software announced FlexNet Manager for Symantec, an Enterprise License Optimization tool. Designed to identify Symantec software installations, reconcile purchases with installations, and optimize license consumption, FlexNet Manager for Symantec is built on the FlexNet Manager Platform, which also received an upgrade.

■ GigaSpaces Technologies eXtreme Application Platform 8.0

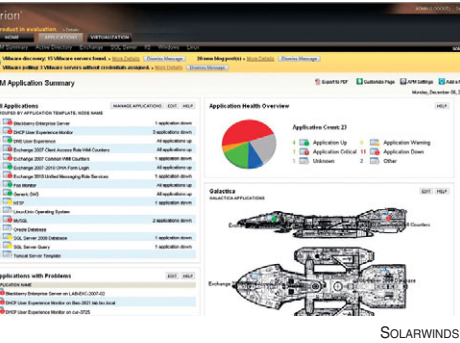
GigaSpaces Technologies released eXtreme Application Platform 8.0, which it claims is the industry's only virtual application platform that enables end-to-end scalability with one product. The release includes a "Same Data, Any API" ability aimed at supporting all common interfaces for accessing data, including Memcached, JPA, JMS, Document, and API.

■ SevOne Performance Appliance

SevOne announced the latest release of its SevOne performance management solution, adding application awareness and the ability to monitor and troubleshoot the performance of virtual servers and application and network infrastructures. The release enables network administrators to monitor and report on key performance indicators to ensure optimum performance and operation of large, multitier applications.

■ SolarWinds Application Performance Monitor

SolarWinds released the SolarWinds APM (Application Performance Monitor), an application and server management solution designed for visibility and



monitoring of critical IT services. IT administrators can get top-down views of Microsoft Active Directory, Exchange, SQL Server, IIS, Windows, and Linux. In addition, they can perform root-cause analysis on apps and physical and virtual servers. Users can also monitor applications by using more than 50 out-of-the-box custom templates or monitors. Other primary features include alert configuration, multitier application architecture monitoring, and open-source migration. The SolarWinds APM starts at \$2,495 with one year of included maintenance.

■ Talari Networks Mercury T750

Talari Networks expanded its APN (Adaptive Private Networking) WAN virtualization product lineup with the new Mercury T750. Enterprises can expect

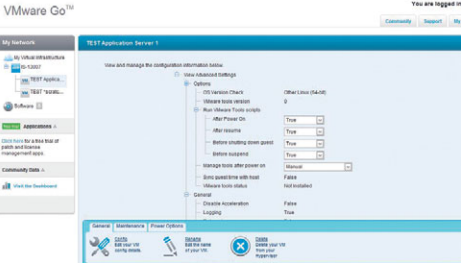


more reliability and performance predictability at reduced costs using economical public WAN links with Talari's APN. The Mercury T750 is designed for enterprises with up to 24 remote sites, and it can work alongside Talari T730 appliances, T200 SOHO appliances, and large enterprise T3000 appliances. The Mercury T750 comes with nine Gigabit Ethernet ports, two bypass port pairs, a single management interface, high-availability

configuration, and SSD support. The T750 is available for \$21,995. For more on this product, see page 31.

■ VMware Go Pro

VMware announced the general availability of VMware Go Pro, a cloud service that enables SMBs to consolidate,



control, and secure their physical and virtual IT infrastructure. VMware Go Pro simplifies IT management so that SMBs can focus resources on high-value initiatives instead of routine tasks. VMware Go Pro provides a Web browser interface and an intuitive wizard to guide users of all experience levels through the installation and setup of VMware vSphere Hypervisor. It also helps customers maintain control of their software inventory by scanning physical and virtual machines for software titles. It can track what machines exist, as well as their configuration, cost, and service history.

STORAGE

■ Actifio Virtualized Data Management

Actifio announced a single, virtualized data management solution for backup, disaster recovery, and business continuity that is designed to integrate seamlessly with existing infrastructure. Features include zero backup windows, instant restore of consistent point-in-time copies of data at any location, and efficient management of copies for analytics or compliance.

■ Agilysys IBM Storwize V7000

Agilysys announced the IBM Storwize V7000, the newest member of the company's storage portfolio. Designed for ease of use and rapid deployment, the IBM Storwize V7000 allows small and mid-sized businesses to improve productivity and reduce costs. The V7000 also includes an updated GUI.

■ BridgeSTOR AOS Appliances For Microsoft DPM

BridgeSTOR introduced the latest appliance in its line of AOS (Application Optimized Storage) Appliances for Microsoft System Center DPM (Data Protection Manager). The company says the appliance will enable SMB customers using DPM to shrink their capacity requirements by up to 90%. The company touts the release as "the most capacity-efficient storage platform available today."

■ CRU DataPort RAX

CRU DataPort announced the availability of its RAX removable two-bay enclosures for 1U rackmount storage systems, including RAID and JBOD. RAX provides



PRODUCT RELEASES

access to bare drives, and fully protects enclosed removable drive carriers. RAX is also available with hardware-based encryption and on-demand write protection for read/write access. Along with DataPort 10 Removable Drive Carriers and DataPort 10 Secure with Internet Key (128-bit hardware-based encryption) drive carriers, RAX enclosures include proprietary TrayFree bays for disk-to-disk backup, off-site disaster recovery, backup/archive workflows, and data usage. Interface options include FireWire 400/800, USB 2.0, SFF-8470 multilane, and eSATA. Connectivity options include point-to-point and port multiplier.

■ EMC VNX

EMC unveiled its family of unified storage arrays called VNX. The offerings scale to meet the needs of small and medium-sized businesses looking for anything from entry-level to data center-class storage. Starting at less than \$10,000, these offerings are capable of rapidly provisioning storage for hundreds of Microsoft Exchange Server mailboxes, or a 1TB VMware data store, in less than two minutes. Other features include the ability to double storage capacity utilization automatically using advanced data reduction technologies and the ability to deliver automated diagnosis, service, and technical support feedback with a single click.

■ Nasuni Filer 2.4
Data Migration Service

The latest version of Nasuni's Filer virtual file server comes with support for a native migration service that can move

data to secure cloud storage providers. The company says that the service can migrate large data sets from multiple servers without losing existing ACLs and permissions.

■ NovaStor NovaBACKUP DataCenter 4.5 & NovaBACKUP xSP

NovaStor announced multiple products, including the NovaBACKUP DataCenter 4.5 and the NovaBACKUP xSP. The



NovaBACKUP DataCenter 4.5 is designed to help enterprises accelerate and simplify enterprise-wide data backup processes; it features a transparent licensing model and a clear, simplified user interface. NovaBACKUP xSP is the company's cloud backup and managed services solution and features reliable and secure provisioning of high-quality local and online backup services. It offers a new central management console that is designed to increase revenue potential by allowing management from a single, Web-based interface.

■ SEPATON S2100-ES2 Series
1910/2910

SEPATON announced its S2100-ES2 Series 1910/2910 disk-based data protection platform with version 6.0 software. It features speeds up to 1,500MBps per node, support for Symantec NetBackup OpenStorage, and support for IBM Tivoli Storage Manager. The S2100-ES2 Series 1910/2910 has a base price of \$257,500.

■ SPYRUS PocketVault P-384

SPYRUS announced the PocketVault P-384, which is an encrypted USB flash drive that runs on Mac OS, Windows, and Linux. The flash drive uses Suite B elliptic curve cryptography, a set of algorithms, and key sizes designed for data protection and information sharing for unclassified information as well as most classified information.

■ Symantec FileStore N8300

Symantec announced the release of its FileStore N8300 NAS appliance, which is designed for enterprises intending to build out cloud storage and manage large volumes of data. The N8300 provides customers with a file storage solution for both on-premises and cloud environments and can scale linearly from two to 16 nodes, with up to 1.4PB of storage within a single cluster.

■ Symantec NetBackup 5200

Software vendor Symantec adds to its hardware portfolio with this backup appliance. The NetBackup 5200, based on the company's NetBackup software, is a turnkey storage unit with 32TB per node. Notably, its deduplication feature supports either client or target deduplication based on the data type.

■ Tandberg Data RDX QuikStation

SMEs now have the option to buy a removable disk library that's network-attached and based on Tandberg's RDX media technology. The RDX QuikStation (\$3,999 and up) is a 2U system with up to 8TB of onboard capacity and unlimited

storage potential offline. The system also has built-in Web-based management.

■ Texas Memory Systems FC-381

The FC-381 is an 8Gbps Fibre Channel interface for Texas Memory Systems' RamSan-630 flash storage system for demanding enterprise applications. The connection provides double the bandwidth of the RamSan-630's previous FC interface. In fact, the company says it's the most sustained Fibre Channel bandwidth available in a 3U device. The system, which can come with up to 10TB of storage capacity, also features support for up to 10 interface modules such as the FC-381. Thus, a RamSan-630 could have 8GBps of FC bandwidth on tap, the company says.

■ Western Digital WD S25 SAS
& WD RE SAS Drives

Western Digital released its second-generation WD S25 SAS drives and its latest WD RE SAS 3.5-inch drives for the enterprise market. The 10,000rpm WD S25 offers a SAS 6Gbps interface in 450GB and 600GB capacities. The 7,200rpm WD RE SAS is offered in 1TB and 2TB capacity points.

SECURITY

■ CloudPassage Halo SVM
& Halo Firewall

CloudPassage announced its Halo SVM (Server Vulnerability Management) and Halo Firewall solutions. Halo SVM delivers a server exposure assessment quickly and efficiently with little impact to server resources. Halo Firewall protects servers

Go to Page 8

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PRODUCT RELEASES

Continued from Page 7

against attacks and features automated host-based firewall management. Both products are free, but paid upgrades with more features will be available in the future.

■ McAfee Security Certification Program

McAfee announced details concerning its Security Certification Program, which includes McAfee Certified Product Specialist and McAfee Certified Assessment Specialist tracks. The Product Specialist track supports McAfee’s various product solutions and allows users of McAfee technologies to “demonstrate competency around the effective installation, configuration, and administration of key McAfee products.” The Assessment Specialist track was developed around the company’s Foundstone Ultimate Hacking assessment methodology.

■ Mobile Active Defense Mobile Enterprise Compliance & Security Server

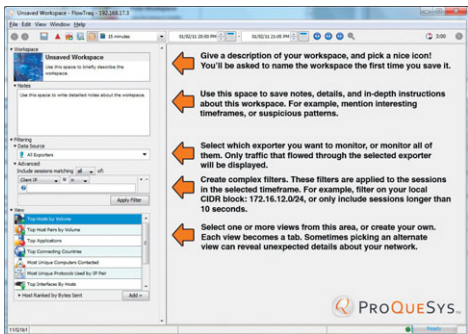
Mobile Active Defense announced the Mobile Enterprise Compliance and Security Server, a tool designed to provide comprehensive access, security, and compliance enforcement mechanisms that meet enterprise policies. A new addition to MECS is GeoLocation controls to enable more flexibility over content filtering and access rights of mobile devices.

■ NetWitness Spectrum

NetWitness announced details concerning its upcoming Spectrum, an automated approach toward malware analysis that NetWitness says replicates the knowledge, process, and workflow of world-class malware analysts to identify advanced and zero-day malware. NetWitness says Spectrum mimics analysts’ techniques by asking thousands of questions about an object and its network behavior without needing a signature or known bad action.

■ ProQueSys FlowTraq

The latest release of ProQueSys FlowTraq network flow analysis software adds support for autonomous systems, which



can assist ISPs in monitoring inter-ISP traffic patterns. Also new is insight into VLANs, which can help organizations spot inefficiencies in their operations and avoid risks of information loss by detecting undesired information streams between segments of their networks. FlowTraq, a gold mine of information for legal discovery and system forensics, now comes with an enhanced help browser and new filtering capabilities in its alerts, reports, and other areas of its interface. For more on this product, see page 31.

■ Top Layer Security IPS 5500 Model 2000ES

This fourth-generation intrusion prevention system from Top Layer Security is geared toward 10 Gigabit Ethernet networks. It makes use of Tilera’s hot-standby Tile multicore processors to keep processing power in reserve for demanding situations. The company says the 2000ES is scalable and provides high performance with low power draw.

MESSAGING & TELEPHONY

■ Intermedia Encrypted Email

Intermedia launched policy-based Encrypted Email. The product allows individual employees to secure a specific email and enables organizations to set and enforce standard encryption policies for email communication. The tool, combined with the company’s previously released user-level encryption product, is aimed at helping companies across various industries ensure their confidential communications are safe, secure, and comply with state and federal legislation, including such industry-specific privacy legislation as Sarbanes-Oxley and HIPAA. Policy-based Encrypted Email encrypts emails based on company-wide rules and policies the customer sets up and manages; all emails and attachments are automatically scanned to determine whether the message warrants encryption before being sent.

■ Voltage Security Voltage SecureMail Cloud Partner Edition

Voltage Security announced Voltage SecureMail Cloud Partner Edition, which is an OEM version of its email encryption. It provides fast integration of secure mail into partner platforms coupled with cloud-based email implementation. Common use cases include the enforcement of encryption policies inside the partner platform and cloud-based decryption of email messages.

SERVERS

■ Netlist, Ultra-X RAM Stress Test Premium

Ultra-X has allied itself with Netlist to add important enhancements to its RST Premium memory diagnostic tool for high-capacity servers. Netlist provided its HyperCloud memory module to assist Ultra-X in raising RST’s memory support to 512GB, allowing users to reduce total time spent verifying RAM integrity.

CLIENTS

■ AMD Embedded G-Series Processor

AMD announced its Embedded G-Series CPU, which the company claims is the world’s first and only accelerated processing unit for embedded systems. Based on AMD’s Fusion technology, the G-Series builds a lower-power CPU using the new “Bobcat” core and a GPU with DirectX 11 capability on the same die. Expected products include digital signage, set-top boxes, thin clients, and SFF PCs.

■ dtSearch Engine

dtSearch released version 7.66 of its dtSearch Engine text retrieval and file conversion software. dtSearch Engine 7.66 includes native 64-bit Visual Studio 2010 support and a .NET 4.0 SDK, which also adds a sample application for the Microsoft Azure cloud platform. dtSearch APIs can index SQL-type databases, and its Spider API can index static and dynamic Web-based data. You’ll also find performance enhancements for faceted search and other hierarchical sorting in cases involving millions of document metadata tags or database records. The



dtSearch Engine for Win & .NET and dtSearch Engine for Linux add support for a variety of Internet, intranet, and commercial applications. For more on this product, see page 41.

■ EIZO FlexScan SX2762W

EIZO launched its FlexScan SX2762W, a 27-inch monitor ideally suited to the rigors of graphic design, CAD/CAM, DTP, and digital photography. This monitor features a native resolution of 2,560 x 1,440, maximum brightness of 270 cd/m², a contrast ratio of 850:1, 6ms gray-to-gray response time, and a 178-degree viewing angle.

■ Giada MI-R880G & ITX-400B

Giada released two new products: the MI-R880G mini-ITX motherboard and the ITX-400B aluminum chassis. The MI-R880G is compatible with AM3 processors and features AMD’s 880G chipset,



which includes ATI Radeon HD4250 integrated graphics. The MI-R880G features four 6Gbps SATA ports that support RAID 0, 1, 5, and 1+0 configurations. The two memory slots can handle up to 4GB of DDR3-1333MHz memory. A Mini PCI-E 2.0 slot is available so you can install an expansion card. You’ll find six USB 2.0 ports, one eSATA port, one SPDIF output, a set of analog audio jacks, and Gigabit Ethernet port. To create a system that maximizes desk space, you can pair the MI-R880G mini-ITX motherboard with the ITX-400B aluminum chassis. It offers a VESA mount so you can attach it to the back of an LCD monitor. For more on this product, see page 41.

■ Micro Focus Visual COBOL R3

Micro Focus released Visual COBOL R3, a visual migration tool that can be used to help developers migrate the estimated 220 billion lines of COBOL code still active in more than 70% of businesses worldwide. The product now allows COBOL applications to be deployed to the Java Virtual Machine and the Microsoft Windows Azure cloud platform.

■ Microsoft Dynamics CRM Online

Microsoft announced the worldwide availability of its cloud-based CRM service, Microsoft Dynamics CRM Online. The product has been available within North America, but on-premises and partner-hosted versions will be globally available on Feb. 28. The product is browser-based and provides mobile access with advanced user personalization, which gives users widespread access to critical sales and client information.

■ NaviSite Managed Services For Lotus Connections 3.0

NaviSite released new managed services for Lotus Connections 3.0 on cloud-based or dedicated infrastructures. Lotus Connections makes it possible for business colleagues to engage in a creative community and accomplish professional goals together. Managed services include on-boarding, application management, licensing, and lifecycle management services.

■ NextComputing Radius EX

NextComputing announced the Radius EX, a portable workstation that features a 17-inch display, an aluminum alloy chassis, and up to seven PCI Express or PCI expansion slots. It also includes 48GB of RAM and up to 7TB of storage with either 15 SATA or 12 SAS hard drives, which are easily removable for service or upgrades.

■ Océ TDS750

Océ announced its latest large-format printing system, the TDS750, which is capable of handling engineering and architecture printouts quickly and reliably. The TDS750 can produce nine D-size prints per minute, and it supports up to six media rolls and 3,900 feet of media capacity for long, uninterrupted printing.

■ Oracle WebCenter Suite 11g

Oracle made enhancements to a component of Oracle Fusion Middleware, Oracle WebCenter 11g, which is designed to deploy portals, composite applications, Web sites, mashups, and social and collaboration services. The updates also expand site support, improve iPhone application access, increase collaboration capabilities, and integrate CMIS (Content Management Interoperability Standard) content.

■ Veryant vCOBOL Enterprise

Veryant introduced vCOBOL Enterprise, a platform to migrate legacy COBOL applications off IBM mainframes for strategic cost-cutting, consolidation, and operational effectiveness initiatives. It features an optimized compiler and COBOL-to-Java runtime technology.

SERVICES

■ FrontRange Solutions SaaS IT Service Management

FrontRange Solutions announced its SaaSIT Service Management solution, which features knowledge management, asset management, and incident management as well as external and internal customer portals and surveys.

■ World Data Products Worldtech Maintenance Services

World Data Products introduced its Worldtech Maintenance Services to protect Cisco equipment. The service provides technical support on Cisco equipment, overnight parts replacement, access to certified technicians, and custom-designed maintenance options. World Data Products offers Worldtech Maintenance on all Cisco products it sells, as well as existing Cisco products currently in use.

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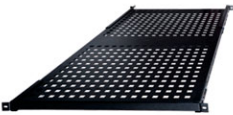
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UpcomingIT Events

For more Upcoming IT Events, see pages 4, 12.

- AITP Oklahoma City

March 15

aitpokc.org

.....
- AITP Southwest Missouri

March 15

aitpspringfield.org

.....
- PASS Minnesota

March 15

passmn.org

.....
- AITP Omaha

March 17

aitpomaha.com

.....
- ISSA Northern Virginia

March 17, 5:30 p.m.

issa-nova.org

.....
- SIM Minnesota

March 17, 2:30 p.m.

Northland Inn

7025 Northland Drive N.

Minneapolis, Minn.

www.simnet.org

.....
- AITP St. Louis

March 24, 5:30 p.m.

Crowne Plaza Clayton

7750 Carondelet Ave.

St. Louis, Mo.

stlouisaip.org

.....
- Data Center World

March 27-31

Mirage Hotel & Convention Center

Las Vegas, Nev.

www.datacenterworld.com

.....
- AITP Akron-Tools For Deploying Windows 7

March 29

Akron, Ohio

www.akron-aitp.org

.....
- ISSA Metro Atlanta

March 31, 6:30 p.m.

SecureWorks

One Concourse Parkway NE

5th Floor

Atlanta, Ga.

www.gaissa.org

.....
- APRIL -

Central Plains ISSA

April 1, 1 p.m.

Wichita Marriott Restaurant

9100 E. Corporate Hills Drive

Wichita, Kan.

issa-cp.org

.....
- AITP Research Triangle Park

April 14

University Club

4200 Hillsboro St.

Raleigh, N.C.

www.rtp-aitp.org

.....
- AITP Oklahoma City

April 19

aitpokc.org

.....
- AITP Southwest Missouri

April 19

aitpspringfield.org

.....
- PASS Minnesota

April 19

passmn.org

.....
- AITP Omaha

April 21

aitpomaha.com

.....
- ISSA Northern Virginia

April 21, 5:30 p.m.

issa-nova.org

.....
- SIM Minnesota

April 21, 2:30 p.m.

Northland Inn

7025 Northland Drive N.

Minneapolis, Minn.

www.simnet.org

.....
- AITP Akron-Student Project Presentations

April 26

Akron, Ohio

www.akron-aitp.org

.....

Inside Data Center Preparedness

Planning & Testing Remain Critical Components To Weathering Disasters

by Christian Perry

SETTLING INTO A COMFORT ZONE is all too easy when systems are running without interruption for weeks, months, or even years. But when disaster strikes, that zone will be obliterated in seconds, leaving data center managers scrambling to restore systems and order. Although it's easy to believe disaster will never strike your environment, recent data shows disaster scenarios reach data centers far too often.

In Quantum's 2010 IT Manager Survey, 21% of the 300 North American IT professionals surveyed indicated that their

(www.radware.com), explains that a business impact analysis, or BIA, can help organizations understand how much data can be lost in a disaster situation, how long it will take to recover services, and the potential reputation and monetary impact on the business.

Mike Meikle, CEO of the Hawthorne Group, adds that several basic concepts should be at the forefront when considering data center preparedness, including preparation, communication, and expectations. Preparation, or due diligence, he says, reflects the risk profile of the data center (location, type of business, and facility), mission-critical systems, vendors, backups, warm site, and similar factors.

"How are we going to communicate with the critical staff when a disaster occurs and throughout the event until it is resolved?" Meikle says. "Also, once an event has occurred, how will we communicate with the business and vendors that rely on our services? Communication then ties into expectations. What is our recovery time objective? Has this been communicated to the organization, does it meet their needs, and have they signed off on recovery time? Do our partners and vendors know what we expect of them regarding the reconstitution of operations after a disaster?"

Getting All On Board

The biggest issue facing data center preparedness efforts, according to Meikle, is getting the organization to buy into those efforts. Despite the potential for major downtime caused by disasters, many organizations fail to consider disaster recovery or business continuity planning as mission-critical strategies due to the nature of the planning, he says.

"It may never be used and can be a costly exercise, so packaging disaster recovery and business continuity planning as a 'risk mitigation' exercise that could protect an organization's profitability is a good strategy," Meikle says. "When you tie disaster recovery planning to the protection of profit and risk mitigation, it speaks management's language."

Another big pain point is the lack of consistent testing of disaster recovery plans. Meikle says that after a disaster recovery document has been drafted, approved, and

tested, it often is placed on a shelf to collect dust for years, in turn falling out of date. When a disaster knocks at the door, that plan ultimately is too full of inaccuracies to be effective. Although testing a disaster recovery plan can be time-consuming, expensive, and difficult, it should nonetheless occur yearly to ensure the plan is viable when disaster strikes, he advises.

"[Testing] is important, because the last thing that any IT organization wants to do is to go through a potentially complex process for the first time during a critical event," says Steve Whitner, product marketing manager for Quantum (www.quantum.com). "Best practices call for a regular plan to test systems for recovering backup data locally and remotely, making sure that all of the issues are planned for—knowing which hardware is available, which operators have access, etc. Regular confidence restores are a very important element of every organization's planning process, but it's one that is often neglected." (For more information on testing your backups, see "Test Your Backups" on page 15.)

Disaster's Many Faces

An earthquake or terrorist attack might represent a classic representation of a disaster, but Meikle notes that these aren't the only events that can render a data center inoperable. For example, a disaster could be something as seemingly mundane as a sprinkler system activating and flooding the data center or a critical transformer failing on the electrical grid and severing power to the data center for days.

"In a business environment where competition is global and partners can range across multiple continents and time zones, it is more critical than ever to prepare for disaster recovery," he says. "With monetary losses quickly rising as customers cannot access your products and services, accurate and tested disaster recovery plans are a key linchpin in corporate risk mitigation." ■



Key Points

- Disasters can strike at any time, so it's essential to implement a thorough disaster recovery plan that ensures your systems and data will be available in emergency situations.
- Preparation, communication, and expectations should all be part of the process when developing preparation plans.
- No disaster recovery plan is complete without regular testing that ensures the plan will be accurate and effective when it's finally put into action.

organization experienced a natural disaster in the past 12 months. Even more of these professionals experienced other major incidents, such as virus attacks, operating system failures, hardware corruption, and accidental deletion of files. The survey also revealed that it took organizations an average of 10.5 hours to resume normal operations after a data-related disaster.

Know Your Needs

Disasters make no exceptions for data centers with an otherwise spotless uptime history. As such, it's critical for data centers of every size to ensure that they can recover quickly in the event of a power-zapping emergency. According to Steve Peterson, director of information technology for Weaver (www.weaverllp.com), this means that data centers should have emergency power, emergency lights, and a tested plan to gain access to the data center during an emergency.

"Managers need to make sure that all pertinent IT systems documentation and their disaster recovery plan are also available from a secure location that isn't housed in their data center," Peterson says. "Accessing their DR plan during a disaster will be crucial, and they should not count on any resources in their data center. [Managers] shouldn't forget environmental cooling in their DR plan. If they only have the capability to power their server infrastructure, they will quickly find their system brought down by heat."

Increasingly, data centers are moving toward performing an analysis that can help them determine the best method for protecting their data and environments in the event of a disaster. For example, Nir Ilani, product marketing director at Radware

Don't Wait Until It's Too Late

Preparing a data center for disasters and other emergencies is generally nothing short of challenging due to the myriad factors involved in the planning. Steve Peterson, director of information technology for Weaver (www.weaverllc.com), identifies the elements of disaster preparation that are most often forgotten until it's too late.

- Ensuring that all members of the DR (disaster recovery) execution team have external access to their DR plan
- Building local sources capable of quickly delivering servers, switches, routers, and other infrastructure that may be necessary to replace damaged equipment or to scale up a remote site to handle the increased load
- Setting up clear team management protocols, such as how team members will communicate with each other, who will be in charge of managing the DR efforts, and who will back them up if the leaders are not available
- Data center cooling and environmental systems management



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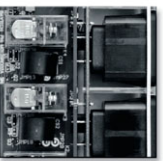
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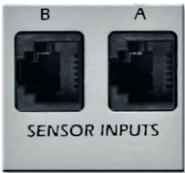
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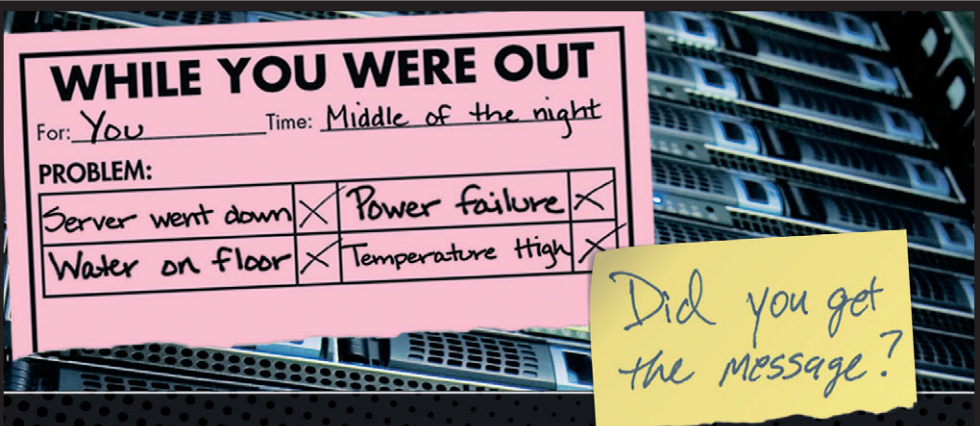
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For more Upcoming IT Events, see pages 4, 10.

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COVER FOCUS

Identifying Weak Points In A Disaster Recovery Plan

An Outside Perspective, Testing & Regular Maintenance Are Key

by Cynthia Harvey

IF YOUR DATA CENTER HASN'T experienced a disaster yet, chances are, it will someday. For businesses, having a good disaster recovery plan can mean the difference between surviving those events and shutting down for good.

According to the Centre for Research on the Epidemiology of Disasters, the world averaged 392 major disasters causing \$102.6 billion in damage per year between 2000 and 2008. In addition, many minor disasters—a snowstorm, a fire, a broken water main—damage business-critical servers and result in costly downtime.

Recognizing the inevitability of these events, a growing number of organizations are turning their attention to disaster

someone from your insurance company, can help you identify potential problems that you may have overlooked.

Just as important, experts can help you prioritize your disaster recovery needs. “Generally most businesses have a problem prioritizing what has to be up within what timeframes. Everybody thinks it’s essential to have everything up instantaneously,” notes Paul Chisholm, chairman and CEO of mindSHIFT Technologies (www.mindshift.com).

An expert can help you make a list of what systems are currently operating in your data center and set recovery time objectives. Then, you can select technology and create procedures to meet those objectives.

Testing, Testing, Testing

Experts agree that testing your disaster recovery plan is the best way to determine potential weak points. Rothstein tells his clients, “If you’re not going to exercise, don’t waste your time developing a plan.” In fact, he believes, “An unexercised contingency plan is often worse than no plan at all.”

Matt Urmston, senior product manager at StorageCraft (www.storagecraft.com), adds, “The big mistake a lot of companies make from a backup and restore standpoint is that they don’t test their restores. They just assume that since the backup software is running and not reporting any errors, that when it comes time to do a restore that they’re going to be able to do that without issue.”

Those assumptions can lead to big problems. For example, Urmston explains that many companies use tape backups. Unfortunately, tape degrades over time, much like the old audio cassette or videotapes from decades past. In most cases, he says, “30% of your tapes are not going to be usable.” When a disaster happens and companies try to restore from those tapes,

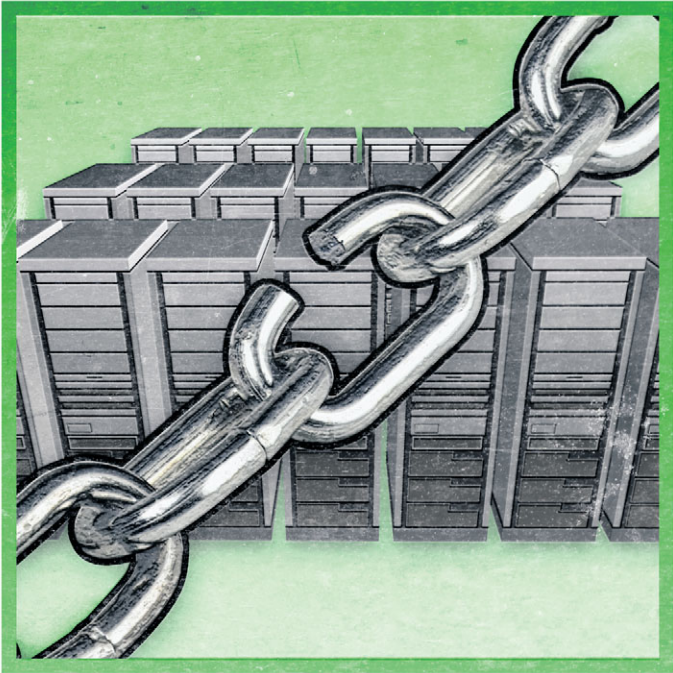
they find that the process takes much longer than they had anticipated and some of their data may not be recoverable at all.

Experts say data centers should practice their disaster recovery plans frequently—quarterly or more—to make sure that their technology works, that their people know what to do, and that they don’t have any unaddressed weak points.

Keep It Up-To-Date

Data centers should also revise their plans at least once a quarter, and preferably more often. Business needs change rapidly, and “What may be a top priority one day may be off the list the next,” Rothstein explains.

In addition, the technology used for backup and recovery advances quickly, as well. Tyler Roye, senior executive officer at mindSHIFT, says, “What we hear from



customers is that they’ve put off getting a level of redundancy in their systems a lot of times because of cost and complexity. We find ourselves informing them that there are modern, more affordable ways to accomplish some of their objectives.”

In particular, technologies such as disk backup, virtualization, and cloud computing are helping companies achieve a higher level of disaster preparedness without dramatic budget increases. **P**

Key Points

- When creating a disaster recovery plan for a data center, it’s critical to involve an outsider with a fresh perspective.
- Testing your disaster recovery plan will point out weaknesses in your preparedness and help to familiarize your employees with what to do in an emergency situation.
- Because business needs and technology change so rapidly, you need to update your plan at least once a quarter.

preparedness. In fact, a 2010 Forrester survey found that upgrading their disaster recovery and business continuity capabilities was the top technology priority for small businesses and No. 2 for enterprises. In addition, the same study found that 32% of enterprises and 36% of small businesses planned to increase their disaster recovery budgets by at least 5%.

For businesses, the key to surviving a disaster is having a disaster recovery plan. But not just any plan will do. Philip Jan Rothstein, FBCI, president of the Rothstein Associates management consulting firm, points out, “It’s got to be a meaningful plan—one you would bet your life on.”

For data centers, a meaningful plan identifies potential weak points in the systems and finds ways to overcome them before a disaster happens. To help identify those weak points, experts recommend three key tips: getting an outside perspective, testing the plan frequently, and updating the plan regularly.

The Value Of An Outside Perspective

Rothstein illustrates the value of an outsider’s perspective with a story about a time he visited a data center. The facility manager proudly pointed out the technology in the facility, but didn’t see that paper and boxes had grown into towering stacks, sometimes precariously close to combustion sources. Junk clogged narrow aisles, and egress was blocked in some places.

When you’re too close to the day-to-day operations of a facility, you don’t notice the potential problems. An experienced outsider, whether it’s a consultant, a vendor, or

The Human Factor

One common weakness of IT disaster recovery plans is failing to account for human needs. “Disaster recovery isn’t just about rebuilding a business or a data center,” explains disaster recovery consultant Philip Jan Rothstein, FBCI, president of Rothstein Associates. “It involves people.”

Frequently, only a few employees at a company understand the disaster recovery plan well enough to explain it to someone else. But to be truly prepared for an emergency, everyone needs to know the plan so that no one stands around wondering what to do in an emergency. (For more information on preparing your staff, see “The Human Element” on page 14.)

Rothstein also says that a good plan should take into account office politics and the realities of life. No one wants to hear that their project or application isn’t important enough to restore right away or that they might have to travel hundreds of miles to work in a remote site for weeks or months. A good disaster recovery plan considers the impact decisions will have on the people involved and communicates any difficult decisions diplomatically.

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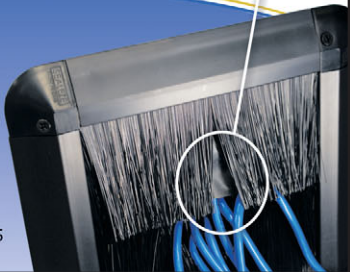
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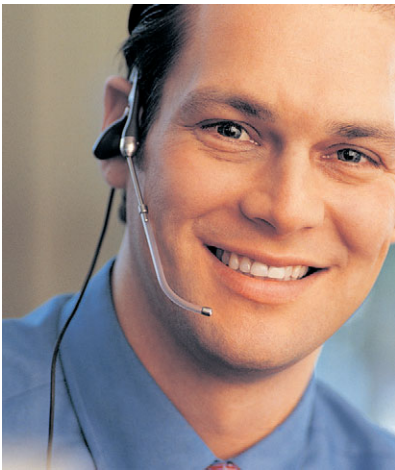
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Report Details Rise In Demand For Help Desks

Help desks are busier than ever, with help desk calls increasing by more than half each year, according to the “2010 HDI Practices & Salary Report” from HDI (formerly the Help Desk Institute). The report details the condition of the IT support industry by gathering survey results from support centers worldwide. In 2010, the number of incidents rose at 67% of the organizations surveyed. The good news is that fewer support centers are anticipating layoffs and/or hiring and salary freezes this year.

Roy Atkinson, senior writer and analyst at HDI, says there is more job consolidation within IT departments, and many IT workers are performing multiple tasks and handling more responsibility than before. “IT departments overall have shrunk a bit over the past few years, both in number of employees and in budget, though projections are that both hiring and budgets may rise in 2011.”



Jenny Rains, HDI research analyst, says support centers are handling the demand of doing more with less in the current economy. “While the number of incidents continues to increase for most support centers, overall performance on telephone metrics has improved from 2009. Survey results also indicate that support center focus continues to remain on customer satisfaction even during demanding times,” Rains says.

Although support centers are managing well, 34% are planning to increase hiring, which is up from the 22% that planned to increase hiring in 2009. “It appears this percent fluctuates more with the economic climate than with the need for more staff,” Rains says.

Managing Change

Atkinson says IT managers need to be more financially adept and tuned to the business. “They need to place emphasis on employee satisfaction, engagement, and retention of their best, most productive people. They need to manage change, not only in the services they offer, but also by being sensitive to the effects of change on the people they manage,” Atkinson says.

The report highlights an increased use of newer means of communicating with consumers, including chat, email, and even social media sites—20% of help centers surveyed used chat last year. Rains says 2010 is the first year the HDI questioned customers about using social media as a channel of support, and although the survey didn’t focus on the success of these methods, 5.3% of respondents say customers can use social media to submit inquiries. “We have seen an increase in the use of Facebook (from 3% to 8%) and Twitter (from 4% to 6%) since 2009,” Rains says.

by Antona Beckman

The Human Element

When Preparing Your Data Center For The Worst, Remember To Outline A Plan For Your People

by Holly Dolezalek

WEAVER TECHNOLOGIES is a CPA firm in Texas that had one of its buildings completely destroyed by a tornado in 2000. The institutional memory of that disaster helps the firm to focus on disaster preparation in a way that other, unscarred firms might not.

The organization’s disaster recovery plan is organized around the criticality of each application, and it contemplates different disaster scenarios, ranging from a simple power outage to the total destruction of a building. But Steve Peterson, Weaver’s

involved is an essential part of any plan.

Establish a contact list that can be accessed even if the network is down, and establish phone trees so that one person isn’t stuck with notifying everyone. Give employees instructions about who to call in an emergency, but also who not to call. To the extent it’s possible, your plan should include what to communicate about what’s going on to people other than the staff who are trying to resolve it. “Communicating with the organization, customers, prospects, partners, and other audiences about what is happening, why it’s happening, and when they can expect to be back online will help stem general irritation, rumors, and the like,” McLachlan says. “Having a secure portal for employees can allow a company to communicate effectively and efficiently to employees to convey expectations, such as whether or not to report to work, work remotely, or report to a designated offsite location.”

Assessment & Prioritization

Once you’re in the situation, what you do depends on which systems or applications are affected. “From a technology recovery perspective, one of the first things to do is to ascertain the potential impact,” says Bill Hughes, director of consulting services at SunGard Availability Services (www.sungardas.com). “Did we lose last night’s backup or not? Where were we in the data replication cycle? What did we lose? What changed recently that may need to be taken into consideration?”

From there, you can set priorities for what tasks need to happen right away and who can carry out those tasks. Thinking through what’s most important is an exercise for before the disaster, though, so that it’s easier to establish those priorities with the quickness certain types of disasters might demand. “What are the mission-critical functions of the organization?” McLachlan suggests asking. “What software, hardware, facilities, and equipment or personnel are needed to continue to provide service at a pre-disaster level? What systems can come online later?”

Here, the human element involves knowing which of your staff has access and expertise in the affected elements. Your plan should include a matrix that



helps you to figure out quickly whose expertise is needed where, and whose is not. It also means knowing which employees are affected by which type of outage and communicating with them about what they can expect.

Training

Training and rehearsal make a huge difference in disaster recovery. “If they’ve done it before, they are less likely to be caught off guard,” says Bob Glavan, vice president of data center operations for Server Farm Realty (www.serverfarmrealty.com). “Practice makes perfect.”

But training also can help head some disasters off before they even happen, Glavan explains. “Human error statistically accounts for the majority of data center disasters, and it is imperative to inform employees that disasters occur when things get lax,” he says. “Bypassing procedures and/or failing to understand them in the first place typically are at the root of most disasters.”

Hughes believes that IT employees are ideally suited to training for disasters, because disaster—or near-disaster—is more familiar to them than most. “Technology teams face more ‘disasters’ than the average team, whether that’s a system failure, unexpected service slowdown, provider failure, or even a system swap-out,” he says. “One way to improve employee expertise is to link those experiences to the disaster response procedures so that they are using the same procedures to address a localized outage as they would be, on a grander scale, in a disaster. That way they master at least some of the components of their response process through day-to-day activities.” ■

Key Points

- Disaster planning means bringing systems and equipment back online, but the human element informs every aspect of those tasks.
- Training, rather than being another item on your plate, serves to lessen the likelihood of disasters caused by human error and to increase the chances that your organization will recover quickly from any disaster.
- Communication is the linchpin of handling the human element in a disaster. Both the staff who will resolve the disaster and the users who will be affected by it need as much information as you can give them.

director of IT, explains that although the plan focuses on data and equipment, the human element is what makes it work.

“The first step in our plan is to get in contact with as many of the employees as we can and make sure they’re safe,” he says. “Then, based on the scenario that’s presented, we come up with a plan for who is going to do what.”

In disaster recovery, your plan—and the training for it beforehand—has to take people into account in four aspects: evacuation, communication, assessment, and prioritization.

Evacuation

Some disasters mean that your first step is to make sure that everyone on your staff is safe. That changes if it’s a flood over the weekend that’s only in the data center, or a flood during the week that affects the whole building and surroundings. “It’s important to get everyone in the data center out of harm’s way and working in a safe environment,” says Phara McLachlan, CEO of Animus Solutions (www.animussolutions.com). “Make certain that your data center’s key business functions can and will be moved with answers as to where and how.”

Your plan has to include a way to know where employees are, regardless of where that may be, and a way to tell them whether they should stay where they are, come to a defined meeting place, or go to a different location in the affected building.

Communication

Because every disaster or problem is different, plans will change, maybe by the hour. What won’t change is the need for communication, so establishing how to communicate, where to go for information, and how to contact everyone

Top Tips

- Don’t store your disaster recovery plan or employee contact information on the same network that may not be online in the event of a disaster.
- Your plan should include detailed instructions about how data is backed up daily and how to turn it on in the event of an emergency.
- Don’t just rely on the organization’s overall disaster plan—data centers are too important and too vulnerable for that. “It’s important to have a disaster plan specific to the data center vs. being a footnote in the larger organization’s disaster plan,” says Phara McLachlan, CEO of Animus Solutions (www.animussolutions.com).
- Rehearsals really matter in disaster recovery planning. “The key to recovery preparedness is people who know what they’re supposed to do (and not supposed to do), when, [and] how, in concert with who or what,” says Bill Hughes, director of consulting services at SunGard Availability Services (www.sungardas.com).

COVER FOCUS

Test Your Backups

Proper Testing Ensures Your Data Is Always Available, No Matter What

by Bruce Gain

• • •

OPTIMIZING BACKUPS is without a doubt one of the principle challenges in the IT world. Done right, business-critical applications and data are available in the event of a system failure or even the destruction of the entire data room with little or no interruption in business operations. But if data cannot be restored in

Key Points

- A key metric when testing backup performance is simply determining how long it takes to complete backups and the time it takes to recover the data.
- Comprehensive testing will make it possible to quickly pinpoint the weak points while prioritizing which areas require immediate attention.
- A service-level agreement will offer concrete and objective proof of whether the backup system is working as it should.

the event of a disaster, the consequences can be dire; in fact, some businesses have been forced to file for bankruptcy when data was lost or could not be accessed as needed. But suppose your enterprise’s backups are done on schedule and the process has been certified by third-party audits. Is that enough? Probably not.

So how do you really know that your data backups are functioning correctly? Ensuring that backed-up data and applications are available when required in the case of an emergency or anytime else requires routine and stringent testing. Here are some ways to go about doing that, so the worst-case scenario never happens.

Check, Compare & Test Again

Testing backup efficiency often involves two simple yet key variables: how long it takes to back up your data and how long it takes to restore it. “Backups and restoration are simple—you want to do them as fast as possible,” says Brad Kowal, assistant data center director for Shands HealthCare in Florida. “The faster you do them, the more backups you do. If I can do two backups a day instead of one a day, I now have the ability to do two snapshots to protect myself twice as much.”

Determining what the optimal metrics should be involves assessing how long it should take to complete data backups and recovery to meet business needs. Once that is determined, it is necessary to make sure that the infrastructure is in place to achieve the objective. Subsequent testing will then enable you to gauge whether performance is what it should be. “A key metric is whether or not it is possible to achieve a given backup or recovery in a given [time] window,” says Stephen Johnson, worldwide segment marketing manager for HP StorageWorks. “You need to first determine the objectives for each of the different application areas. It also varies with the company and applications.”

Test Everything, Then Take Action

Comprehensive testing should produce metrics that will make it possible to

determine weak areas when backing up or recovering backed-up data. A good first step is to do a health check of the backup environment, says Nancy Hurley, CEO of Bocada (www.bocada.com). “A health check helps to determine where problem areas are today and helps to determine benchmarks that thresholds should be set against,” Hurley says. “The first initial step to a health check is to analyze success/failure reports by business priority to make sure you are prioritizing troubleshooting efforts and addressing critical business problems first.”

It is recommended to solve most common problems first and then use trend reports to identify less common or chronic failures, Hurley says. “A best practice is to turn off open file errors, as that is generally not an issue but will be reported by a backup application as a failure, perhaps skewing the overall results—it can be determined later if the organization does want to recognize those as errors or ignore them,” Hurley says. “A policy review/modification will often be required in order to eliminate the problems as they are often caused by policy contention (too many jobs kicking off at once) or issues with load balancing on the media.”

Take The Service-Level Agreement Test

Backup performance should be something that is guaranteed in a service-level agreement that you offer your customers—meaning the users, whether it’s the CEO or someone who works part-time in the warehouse. In many ways, SLAs for backups serve as the ultimate test benchmark: Do the backup services that your department offers meet the terms of the SLA? “Rather than manage problems when you see them, setting up an SLA allows you to be proactive in ensuring you are meeting specific backup/recovery goals,” Hurley says.

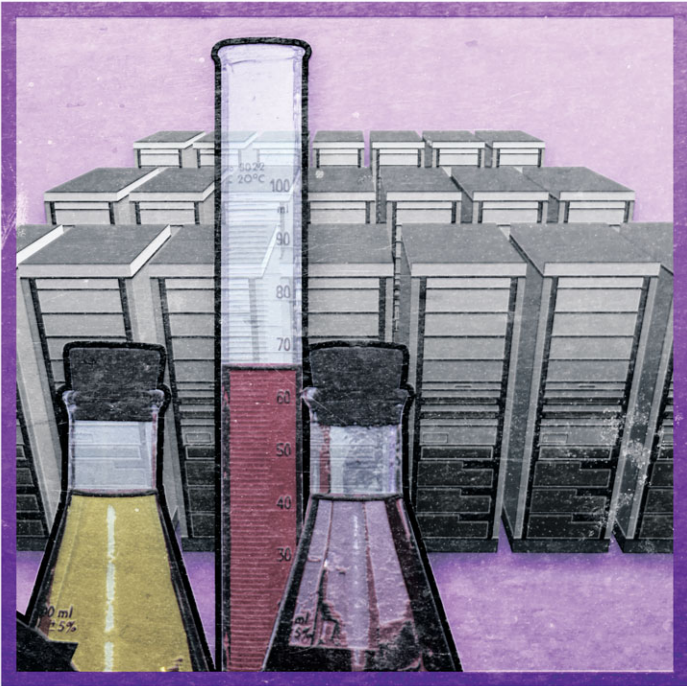
“For example, say you have business-critical assets that get replicated four times a day and backed up once a day, and less critical assets that only get backed up once a week,” Hurley continues. “By setting up an SLA

that says ‘These critical clients must have one good replica a day and one good backup a week,’ you can be alerted if that specific compliance criteria does not occur and manage to the business priority, instead of trying to figure out what the true impact of an error is on the overall backup operation.”

Record, Trend, Analyze

Benchmark data from backup tests should be archived and analyzed in order to make conclusions about what is wrong—as well as what is right—with your backup processes. The test results should be aggregated with data that shows how backups and data recovery are performing over time in order to determine trends. “Trending will reveal what policies should be modified to ensure operational success,” Hurley says.

Job trends, for example, will show detailed backup behavior over time, potentially unveiling chronic job failures, Hurley says. “Backup trends show the amount of data being backed up during a given time period, which can reveal if some servers are too heavily loaded or if assets are being overprotected, and backup duration trends help address the ongoing challenge of meeting backup windows, allowing users to compare their static backup window with what is truly happening on a daily basis,” Hurley says. “It is also good to monitor error



trends, media-usage trends, and capacity trends. All of these will show if there are ongoing issues that can be addressed through policy modification or infrastructure changes.”

Testing: Just Do It

Most data center managers know by now that the survival of many enterprises depends on whether backed-up data and applications are readily available in the event of a disaster. However, many enterprises might invest substantial amounts of money in backup systems but then forget about making sure it works on a regular basis, says John Matzek, CEO of Logic IT Consulting. “Some enterprises just never see how their backups work, even if they have a well-staffed IT department,” Matzek says. “Then, when there is a disaster, it is too late.”

A major element of testing backups is actually getting around to doing it. “Enterprises should do comprehensive backup tests at least once a year,” says Stephen Johnson, worldwide segment marketing manager for HP StorageWorks. “This is something [enterprises] do when trying to stay ahead of the curve.”

IDC Predicts Government IT Trends

A new study from IDC indicates that one of the biggest tech trends the federal government will see this year is the move to cloud computing and shared services. This will help with the consolidation of contact centers and reduce the need for local data centers. U.S. Federal CIO Vivek Kundra is making plans for agency IT reform, and IDC believes that this will be the year where the federal government will invest in both public and private cloud computing projects. IDC also expects that the Open Government Directive will start reaping rewards this year. The directive, issued in 2009, was created to help government entities deliver integrated information and services to citizens.

Cisco Acquires Networking Company

Networking provider Cisco plans to acquire Pari Networks, a privately held supplier of network configuration, change, and compliance management applications. Terms of the purchase were not released. Pari Networks was founded by former Cisco engineers and marketers. Cisco says that integrating Pari Networks’ appliances will improve its ability to monitor the stability of customer networks. The acquisition is expected to take place in the third quarter of Cisco’s 2011 fiscal year, at which time Pari Networks’ employees will be integrated into Cisco’s Technical Services organization.



Malware Toolkits Enabling Most Cybercrime

The script kiddie effect has made its way into the traditional crime world. According to Symantec, even crooks without hacking skills are increasingly using cyberattack toolkits to exploit vulnerabilities in computer systems around the globe. In fact, toolkits facilitated 61% of recent Web threats, Symantec says. Said kits give criminals the tools needed to launch automated attacks that attempt to go undetected, the company says, thus feeding a growing online shadow economy of crime. Zeus is the most well-known recent attack toolkit, but MPack, Neosploit, Nukesplit P4ck, and Phoenix are also popular, Symantec says.

Risk Of Catastrophic Cyberattack Low

Stuxnet demonstrated what a determined, skilled entity with deep resources could do with malware, raising the stakes in the theater of cyberwarfare. That said, the risk of another infrastructure attack of similar magnitude or greater is statistically lower than commonly believed, according to research by the UK’s Organisation for Economic Co-operation and Development. The OECD reports that although cyberweaponry is becoming more sophisticated and used more frequently, a true cyberwar probably won’t happen. Still, governments do need to prepare detailed responses to threats that have recently become more feasible, the OECD says.

Key Points

- Modular data centers are premanufactured, containerized facilities that are optimized for IT deployment.
- They are significantly less expensive to deploy than equivalent conventionally constructed facilities. Project lead times are also much faster.
- Business flexibility is enhanced thanks to greater levels of energy efficiency and reusability.

Modular Data Centers

The Faster, Cheaper Route To Deployment

BY CARMİ LEVY

Building a new data center or retrofitting an existing one using conventional construction techniques can be expensive and time-consuming. Modular data centers can cut these traditionally capital-intensive projects down to size.

These container-sized facilities, like manufactured structures, are built and outfitted in a factory before being shipped to the site for installation. They go well beyond conventional prefabricated structures, however, in that they are preconfigured for IT-intensive infrastructure, such as power, cooling, and connectivity.

■ REDUCING COST & COMPLEXITY

Modular data centers can be built less expensively and more quickly than traditional data centers. They also take advantage of standardized designs and best practices that might be otherwise too complex or expensive to implement within conventional construction.

“Traditional data centers can take one to two years to build at a cost of up to \$20 million per megawatt. Modular data centers offer a fully functioning self-contained IT environment and are capable of being built in as little as six weeks,” says Wade Vinson, power and cooling strategist and Performance Optimized Datacenters chief technologist at HP. “Modular facilities can be assembled nine times faster [and] be fully configured and tested at 45% less cost than a traditional data center.”

David Hardy, product marketing manager for the modular data center solutions group at Dell, says modularization benefits from supply chain efficiencies

can only apply when construction moves offsite and upstream. This consolidation trend is nothing new.

“Everybody in IT is used to these standardization trends, where lead times and costs shrink while quality and reliability go up,” he says. “But this is a relatively new thing for data center facilities.”

■ SMART BUILDING TECHNIQUES

Also new to data centers is the shift away from sequential construction to parallel methods. “In the typical construction project, you have to finish building the foundation and preparing the area before you can do anything else,” says Jeff Dusing, communications manager at ModSpace (www.modspace.com). “Instead, while we’re manufacturing the walls and other key elements in a factory offsite, we can simultaneously be preparing the area to receive the modules as soon as they’re finished. This simultaneous onsite and offsite work accelerates your production timeline.”

Dusing adds that the benefits don’t stop there. Standardized construction methods and lessons applied across multiple projects make it more cost-effective to deliver green facilities.

“By using factory controls and repetition, we’re able to reduce the amount of onsite waste and disruption,” Dusing says. “We make far better use of available materials, which dramatically reduces construction waste, emissions, and the long-term impact on the land.”

That eco-friendliness extends to reusability, as well. “Once you build a conventional data center, it’s not going anywhere and you’re not going to be able to redeploy it,” says Dave Mulholland, vice president of marketing and service at PDI (www.pdicorp.com). “You can use a modular data center over and over again. Instead of throwing it away, you can ship it anywhere you need it.”

Dell’s Hardy says this flexibility and cost-effectiveness are driving the trend mainstream. “It was exotic a year ago,” he says. “Now we’re hearing from companies in many different industries. Decision makers are really starting to appreciate the concept and the value proposition of modularity.” ■

Control & Cost-Effectiveness

Modular data centers allow IT leaders to avoid the tradeoffs associated with traditional data center projects.

“If you build your own data center, it’ll take at least 18 months and a lot of money,” says Dave Mulholland, vice president of marketing and service with PDI (www.pdicorp.com). “If you want control over your own destiny and want to control your capital investment cash, modular projects are cheaper and faster.”

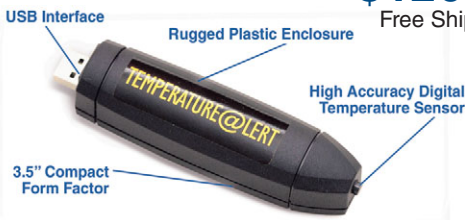
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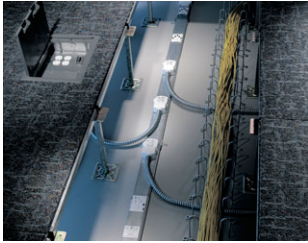
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IDC's Top Government IT Predictions For 2011

The experts at IDC recently made their predictions for the U.S. government in 2011, and the research firm foresees paradigm shifts for government employees, public citizens, and enterprises large and small.

One of IDC's biggest predictions is that government agencies, programs, and processes will all enjoy improved collaboration thanks to the Open Government Initiative, or OGI. According to Shawn P. McCarthy, director of research for IDC Government Insights, the OGI will highlight the agencies that are good at interacting and communicating and put the heat on those that are unresponsive and incapable of adequately reporting expenses and priorities. "By tracking and reporting this data, government offices are forced to be more responsible," McCarthy says. "No one wants to be the office that has the worst statistics."

Streamlining & Saving Costs

Of all the predictions, the one with the potential to impact both public and private IT sectors alike is the explosion of private and public cloud computing. IDC sees cloud computing reaching critical mass in 2011, with 25% of government organizations tapping into the technology in some form by year's end. McCarthy sees significant cost savings and rapid deployment as the top reasons organizations will turn to the cloud. Cloud computing also might be the solution to one of IDC's more negative predictions: that cumbersome information management and open-records hurdles will begin to have an impact on agency operations.

Other predictions include the government slashing contact centers by 25% by 2015; mashups enabling citizens to design, build, and deploy the personalized government services they need; governments better leveraging "smart" technologies at all levels; the government workforce utilizing mobile devices and technologies to increase productivity; and operating expenses becoming the primary government IT funding source. Additionally, IDC sees strategic selection and procurement of IT consolidating and changing hands, enabling line of business and program owners to make the key decisions rather than government IT and procurement organizations, as has been the case in the past.



McCarthy also notes a shift in leadership roles. "In government, it's usually the federal government that leads and state and local governments follow," he says. "But for the next two years, we see a chance for state and local governments to take a lead role in areas including regional cloud solutions for common government business applications, standardized business processes for those applications, and tablet computing."

by Andrew Leibman

SIX QUICK TIPS

Commissioning A Data Center

Getting The Data Center Ready For Launch

by Sixto Ortiz Jr.

A DATA CENTER is a highly complex collection of systems and equipment. So, the process of getting a data center from construction completion to daily operational usage is much more complex than simply flipping a switch and watching everything hum to life. It is absolutely necessary to have an effective, well-thought-out commissioning process that ensures all systems are "go for launch" whenever the data center is ready for operational service.

Select The Right Organization For Commissioning

The first question that comes to mind in terms of commissioning is not only how to go about it, but who should lead the process. It is important to focus efforts on identifying a commissioning agent or entity that has the proper expertise and independence needed to deliver a thorough and objective analysis. The time to ferret out and correct troublesome issues is during the commissioning process, not after the data center becomes operational.

For starters, it is important to use a third party to perform the majority of the commissioning process, says Gene Hodson, AAIA, a technology consultant for Moye IT Consulting (www.moyeconsulting.com). Using a general contractor, subcontractor, or IT staff member to do multiple systems commissioning can result in missed problems or incompletely tested systems. The idea, Hodson says, is to hire a third party that can focus on the collective status of all systems and be a single point of contact for the entire process.

In addition, administrators must focus on the task of hiring a truly independent third-party commissioning agent. Thus, the commissioning division of the engineering firm doing the design or an equipment manufacturer should not be hired to perform their own commissioning, says Terry Gillick, senior vice president of the commissioning division at Primary Integration (www.primaryintegration.com). Also, the commissioning agent should have a QA/QC process that can be used to replicate tests and verification procedures once the data center is fully operational, Gillick says.

Finally, he adds, administrators should require full lifecycle commissioning. This is a process that goes beyond mere equipment testing and continues through design, construction, and the first year of data center occupancy.

Conduct Effective Testing

One of the key tasks during the commissioning process is conducting the right level of testing across all data center systems. It is important to not only clearly identify the items that must be tested, but to also ensure the right testing protocols are performed so testing results are meaningful and able to reveal real problems, if any.

It is important to understand how the commissioning process will be performed and the specific design aspects that will be tested, says Mark Thiele, vice president of data center strategy at ServiceMesh (www.servicemesh.com). According to Thiele, examples of specific items that must be in the testing plan include water supply, weight and load bearing capabilities of the roof and floor, assumptions about upgrade options and load capacity, security aspects, electrical supply assumptions, PUE expectations, and LEED building criteria.

Another key aspect that should not be overlooked, Thiele says, is the measurement of performance under stress, maintenance, or upgrade situations. This type of process testing can help administrators identify potential situations resulting from poorly documented processes.

Gillick recommends that commissioning personnel test and validate all building automation systems. This is important because a data center's high level of automation means operational sequences must perform as needed for all scenarios, including routine maintenance and unexpected failures that require personnel to take systems offline.

In terms of testing frequency, components should be tested once, subsystems twice, systems three times, and the entire site at least four times, says David Fitzpatrick, vice president of European Infrastructure Outsourcing at Capgemini (www.capgemini.com).

Plan For Effective Commissioning

The implementation of an effective commissioning process, just like any other highly technical endeavor, requires the development of a sound plan. It is important to recognize that a sound commissioning process is much more than a "go forth and test everything" proposition.

Capgemini's Fitzpatrick says an organization should understand the data center design criteria before undertaking the commissioning process. These design criteria comprise the basis for systems testing. General categories of design criteria that must be well understood, he adds, include resilience (for example, Uptime Institute

data center infrastructure design topology tiers), thresholds (such as response times for generators), security, operations (i.e., monitoring), and environmental (such as load, failure, cooling, and climate scenarios).

In addition, he says, acceptance criteria that spell out performance levels for everything from components to subsystems, systems, and the entire data center should be understood before the commissioning process begins. Because commissioning can

Best Tip:

Be Safety Conscious

It is critically important to thoroughly test the fire suppression sequence, says Gene Hodson, AAIA, a technology consultant for Moye IT Consulting (www.moyeconsulting.com). The sequence of events that leads to system activation needs to be understood by all stakeholders, including the data center owner, fire suppression contractor, and local fire marshal.

Most Practical Tip:

Use Project Criteria During Commissioning

The organization should take commissioning as an opportunity to achieve project goals and objectives, says Terry Gillick, senior vice president of the commissioning division at Primary Integration (www.primaryintegration.com). To do this, the project drivers and the criteria defining success should be identified and used as criteria during commissioning. For example, Gillick says, a LEED sustainability project has well-defined guidelines that are key to defining the commissioning process.

take 30% of the time it takes to construct the data center, administrators must ensure the right mix of resources is allocated.

Moye IT Consulting's Hodson says obtaining support for the commissioning process from senior management is important for success. Management must understand, he adds, that a successful commissioning must be observed by multiple parties to ensure all problems are documented and corrected in a timely manner.

Optimize Infrastructure

The commissioning process is a great opportunity for data center administrators to focus on those infrastructure aspects that will make life easier for the personnel running the data center once routine operations begin.

For example, this is an excellent time for personnel to fully label all system components, Hodson says. Electrical panel boards and PDUs should have every circuit breaker, receptacle, and/or hard wired feed labeled. Same goes for copper and fiber cabling, patch panel ports, racks, and cabinets: All these components, he adds, should be labeled on each end. This simple process ensures rapid resolution of component failures.

Another good practice is to develop a grid naming system using a raised floor's tiles, says Hodson. The key is to use letters for the length of the floor tiles and numbers for the width of the tiles, thus creating a "battle-ship grid" of sorts that clearly identifies every portion of the raised floor. This can help maintenance personnel quickly zero in on problems by simply relying on the naming convention to know exactly where a problem is occurring. ■

BONUS TIPS

■ **Generate good documentation.** Terry Gillick, senior vice president of the commissioning division at Primary Integration (www.primaryintegration.com), says thorough documentation developed out of the

commissioning process can provide a benchmark for future operations and serve as the basis for standards at other company facilities.

■ **Get electrical testing right.** In order to perform

electrical testing correctly, it's important for personnel to select electrical and heat load emulation that matches server cooling and electrical requirements across the entire data center.

Energy Resource Management

Tools That Point Toward Higher Efficiency

by William Van Winkle
• • •
“**HAVE YOU MEASURED** your corporate greenhouse gas emissions?”

No, this isn’t some rhetorical question. This is the very first question asked on Walmart’s “Supplier Sustainability Assessment: 15 Questions for Suppliers” document. Michael Meehan, co-founder and CTO of energy performance management platform vendor Enxsuite (www

Key Points

- As large businesses and government agencies are increasingly emphasizing environmental awareness and supply chain management, ECEM (enterprise carbon and energy management) tools are becoming a necessity for winning new business.
- ECEM software often starts with straightforward analysis of electricity consumption but can quickly expand into a wider view of energy resource utilization.
- Determining ROI on ECEM software is complex and often plagued by taking too narrow a view of the resources involved.

.enxsuite.com), notes that companies such as Walmart, Procter & Gamble, and other heavy hitters are launching such indexes in part to be responsible and bring more sustainability to the market. But in the end, the real driver is lowering costs. Sustainability, energy management, and cost control are all facets of the same discussion. And if companies want to supply goods and services to those heavy hitters, they need to show how much they’re engaging in that discussion.

Up to present, most data center views on energy have focused on electricity consumption and PUE (power usage effectiveness), which states the ratio of total power used in a data center relative to the energy actually being consumed by IT hardware. However, this is only the opening scene in a much larger play about ERM (energy resource management) and a new software class increasingly known as ECEM (enterprise carbon and energy management) tools.

According to Christopher Mines, an analyst for Forrester, ECEM systems are en route to becoming commonplace in enterprises for multiple reasons, including the improvement of operational efficiency, better communication of business metrics to stakeholders, press relations and brand promotion potential, regulation compliance, and climate change risk mitigation. On this last point, Mines notes that “the Securities and Exchange Commission now

requires companies to include assessment of climate change risks in their financial reporting.” However, as a general rule, the larger the company, the broader that company’s energy view will need to be.

Variety Among Tools

Certainly, not all ERM systems span from CPU voltages to global temperature trends. There are platforms that spotlight just data centers and the electricity they consume. Some software focuses on the energy that comes into a data center, how that energy gets used, and how to tie those observations back into constructive methods for running the business more efficiently.

“Typical server utilization is about 6%,” says Michael Tresh, director of product management at Viridity (www.viridity.com). “That means 94% of the energy going into running data center servers is wasted. The amount of data actually going into running the servers is about 40%, with about another 40% going toward cooling those servers. So you have 80% of the total energy consumed going toward 6% utilization. You have to recognize how much power your IT assets are consuming and whether they’re doing anything useful at all. Typically, the answer is no, and that’s where you get the first big win in reducing costs.”

Viridity generally recommends that servers running at under 2% utilization be eliminated. Servers running at 2 to 10% should probably be consolidated. Through such recommendations and analysis of the many variables surrounding them, Tresh says that “it’s not uncommon for a 500-server data center being able to save hundreds of thousands of dollars over the course of the IT assets’ lifetime.”

At the opposite end of the spectrum, Enxsuite sees energy—lighting and computer management in particular—as “the low-hanging fruit” that opens the door for enterprises into larger energy savings opportunities. As an example, Meehan points to a Canadian pulp and paper client with \$6 billion in annual revenue. The company started with examining its electricity usage, but that led to discovering a way to take its waste, process it, and convert that waste into energy. This dropped energy consumption by more than 25%. The company saved even more by not having as much waste disposal cost and then helped its bottom line further by receiving carbon trading credits.

“We call it carbon here in Canada, but there are all kinds of energy efficiency laws in the U.S. and energy efficiency standards in different states,” says Enxsuite’s Meehan. “There’s Obama’s executive order 13514, which says that every building the govern-

ment owns has to do energy-efficient lighting. There are targets for energy reductions on all of them that have to be shown and tracked. And if you sell to the U.S. government, you have to show all the types of energy savings you’re doing. Not only can you not bid if you don’t supply this information, the government will use that information to choose from among vendors.”

The need for ECEM is increasingly obvious, and according to John Stanley, research analyst for Eco-Efficient IT at The 451 Group (www.the451group.com), there are now over 100 software vendors in this space. Some platforms even go so far as to include social features, such as anticorruption measures and bad labor practices, and several will dive deep into an enterprise’s supply chain.


Keeping Perspective

Regardless of the ECEM software’s breadth, though, quantifying ROI can be difficult because it’s not the software that generates the savings. ECEM tools only point the way toward higher efficiency. It’s implementing of the software’s findings and suggesting one or two projects at a time that generate the improvement. Some enterprises prefer to outsource the handling of these projects to third parties, which occasionally could be the software vendor’s services arm. Because energy management is so multifaceted, many ECEM companies are reluctant to give average ROI statistics for their clients.

Additionally, how much efficiency can be revealed by ECEM platforms will depend on the company’s past efforts. Meehan notes that many clients approach the company after having already taken many energy-saving measures and are looking for ways to extract the last few percentages of possible efficiency.

Stanley says that a common misstep among enterprises approaching ECEM tools is that they fail to take a holistic enough view when trying to figure total cost of ownership. A common example is looking at the long-term savings of adding one server running multiple virtual machines compared to buying separate physical servers for each application. This might seem like a simple case of 1kW vs., say, 5kW, but it ignores the fact that there is still an additional 1kW demand being placed on UPS and generator systems.

“Another misstep is not thinking about your business requirements,” Stanley says. “If your data center processes financial transactions, and downtime costs millions of dollars per hour, you probably should be more risk averse in terms of what operational changes you’re willing to make to save money on energy. On the other hand, if you’re triple-redundant and there’s no way a customer will perceive something going down, you can be more aggressive in the changes you want to make.”

ECEM software requires new skills and some different means of approaching business operations, but its benefits are clear. Especially for larger organizations, the issue is increasingly not if ECEM will become a business necessity, but when. 

App Downloads Continue To Rise

Gartner predicts a strong market for mobile applications this year and in the future. The research firm says mobile app revenue will grow to \$15.1 billion this year, an astronomical increase compared to last year’s total of \$5.2 billion. The company predicts total app downloads to reach 185 billion by the end of 2014. The company cites not only smartphones but also tablets as the driving force behind this surging market. Apple’s App Store held 90% of app downloads in 2010 and will continue to dominate through 2014, according to Gartner. However, Gartner named Google’s Android Market, RIM’s App World, and Microsoft’s Marketplace as likely contenders.



Intel To Invest \$100 Million In University Research Centers

Intel Labs announced that it will invest about \$100 million in U.S. university research over the next five years to help spur innovation in computer technology. The company will open several Intel Science and Technology Centers around the country that will work on Intel research projects in visual computing, security, mobility, and embedded solutions. The first center, at Stanford University, will focus on visual computing technology. Stanford will serve as the hub for a collaborative research network that will eventually include U.C. Irvine, U.C. Davis, U.C. Berkeley, Cornell, Princeton, Harvard, and the University of Washington. In addition to the funding, Intel will also employ four of its own researchers at each center.

Research Highlights Usefulness Of Femtocells

ABI Research says that femtocells, small cellular base stations that connect to a cell network via broadband, may turn out to be more useful than originally thought. In addition to improving in-home cellular coverage, the company says that femtocells can also be used to improve home security and to integrate phones with televisions and other devices in homes and offices. Because femtocells “know” when a registered user is present, applications connected to femto-cell-enabled devices can take actions based on the presence (or absence) of a user, such as turning lights on or off, activating security systems, informing parents of a child’s arrival home, or synchronizing content among devices.

Report: Government Workers Lag In Access To Tech

Government information workers, or iWorkers, are falling behind their private-sector counterparts, according to a report from Forrester Research. Government iWorkers are struggling most in access to new technologies and work styles such as portable devices, advanced collaboration tools, and mature telecommuting initiatives, says analyst T.J. Keitt. About 87% of respondents say they still rely on a desktop PC for work, with 11% using a notebook; less than 10% have access to a mobile phone at work. About a third of government iWorkers say the technology they use at home is better than that used at work.


ECEM Deployment Rising

According to Forrester’s April 2010 and November 2009 Global Green IT Online Surveys, enterprise carbon and energy management system deployment is gaining traction. Between the two surveys, companies with ECEM in place rose from 13% to 19%. Those that had no idea when or if they would ever deploy ECEM dropped from 74% to 55%. Encouragingly, according to the April survey, 27% had plans to implement ECEM in 2010 or thereafter. All told, if the trend continues, the majority of enterprises will soon either be using energy resource management systems or have plans in place to adopt them.

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CableOrganizer.com Panduit Pan-Way Metal Surface Raceway System



Description

These innovative metal raceways use a patent-pending bonding design that provides full continuity of the ground path between fittings and channel. Made of galvanized steel with a 600-volt rating, the raceway can route, protect, and conceal power wiring or communication cabling.


- Snap-mount assembly reduces installation time for contractor labor savings
- Full assortment of fittings, junction boxes, faceplates, and accessories included
- 20-year manufacturer performance warranty
- UL Standard 5
- Compliant with RoHS Directive 2002/95/EC, NEC Article 386, and CEC Rule 12-1600

Best For: New construction or retrofit projects.

Price: Starts at \$76.78

Product

NetCablesPlus Fiber Surface Mount Box (6- or 12-Port Configuration)



Description


Designed for multimedia and optical fiber networking applications, NetCablesPlus Fiber Surface Mount Boxes are suitable for overhead cabling projects and feature write-on designation labels and port icons for easy identification. The boxes use 1-inch-high snap-in modules for different jack and connector configurations and are available with six or 12 ports. Breakouts on three sides allow for raceway or cable entry, and modules can be snapped out of the box's front for making changes without opening the box.

- Studs for cable tie fastening
- Breakouts available in 0.75- x 0.5-inch, 1.125- x 0.75-inch, and 1.75- x 1-inch sizes
- Suitable for Ethernet, AV, and other applications
- Studs for cable tie fastening

Best For: Any data center cable management application.

Product

PDU Cables UL Listed Power Distribution Cable Assemblies



Description

PDU Cables is the leading manufacturer of UL Listed power distribution cable assemblies to the data center market, being fast, reliable, and knowledgeable while remaining cost-effective in providing the industry's highest quality power cables. Leading in innovation, PDU Cables is the first cable assembly company to introduce colored conduit to the power distribution market, the first company to gain a UL Listing, and the first to introduce the Power Cable and Equipment Configurator. Centrally located in Minneapolis, Minn., PDU Cables provides customers with 24-hour turn-around and standard transit times of one to three days to most U.S. locations (cable expedition available). Currently more than 5,000 data centers use PDU Cables' products to save time and labor and to reduce overall project costs.


- UL Listed and tested power distribution cables
- Molded cord assemblies
- Drop-down SO cord

Best For: Raised floor data center applications.

Contact: (866) 631-4238 | www.pducables.com

Product

Rackmount Solutions Neat-Patch Cable Organizer



Description

Tired of messy networks? Place the Rackmount Solutions Neat Patch kit between a switch and a patch panel, and you'll never have another cable mess. We guarantee it!

- Promotes bend radius compliance in patch cable management
- Patch cables are easier to trace from panel to electronics
- Priced less than the leading brands of horizontal management
- Uses a patented plastic molded design that is non-conductive. Wire with confidence there will be no electrical issues such as surges and grounding since the plastic fingers are not riveted to metal or metal D-rings.

Best For: Enterprises building a new network or wanting to clean up an existing installation.

Price: Starts at \$59.34

Contact: (866) 207-6631 | www.rackmountsolutions.net

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Blaine Flamig

Management

CableOrganizer.com Powerflor Modular Raised Floor System



Ideal for complete underfloor systems, the Powerflor Modular Raised Floor System consists of 18- x 18-inch standard carpeted panels that are easy to configure and assemble. Each can accommodate up to four grommets of duplex power or data outlets.

- PVC-free material reduces fire-related risks
- Tool-less disconnecting and reconnecting
- Provides up to four 20-ampere circuits per building feed
- Standard system provides three standard circuits (shared neutrals and grounds) and one isolated circuit
- Supports loads of up to 41,000 pounds per square foot

Best For: Call centers, computer training facilities, IT labs, and conference rooms.

Price: Starts at \$39.99 per panel

CableTiesAndMore.com Wire Trak Raceway In A Box



The Wire Trak Raceway In A Box dispenses ready-to-use raceways straight from the box, saving installation time through pull-and-cut ease with no waste. Extra raceway can be pushed back through the forming/recoil device, with cable recoiling itself in the box.

- Hinged with a pre-applied peel-and-stick adhesive backing
- Cables and cords are easily accessible after installation
- Paintable, UL 94 VO-rated material
- Available in 0.75- x 0.5-inch (WxH), 1 x 0.5-inch (WxH), and 1.5 x 0.75-inch (WxH) sizes in 50- or 100-foot rolls

Best For: Cable management in environments that call for customizable raceway lengths.

Price: Starts at \$46.25 per 50-foot raceway

Chatsworth Products Velocity Cable Management



Velocity Cable Management from Chatsworth is an economical solution for everyday use in telecommunication and equipment rooms and lab spaces that creates a complete vertical and horizontal pathway for premises cabling and patch cords on Chatsworth's Rack Systems. An available Standard Pack saves on ordering and shipping times by combining Chatsworth's Standard Rack with Velocity Cable Management in one carton with a single part number.

- Single- and double-sided vertical managers and horizontal cable manager included
- Tool-less, snap-together assembly
- Large cross-section provides abundant space for cables
- T-shaped cable guides organize cables by rackmount unit
- Included snap-on covers secure and protect cable

Best For: Any equipment room, office space, or data center.

Rackmount Solutions Rack-ups



The Rack-ups wire management straps from Rackmount Solutions are designed to help manage and safely secure electrical, CATV, and fiber-optic cables. Made from Velcro® hook-and-loop tape, Rack-ups will not cut or pinch cords like plastic ties. The hook-and-loop tape makes it easy to adjust, remove, and/or add cords. These straps have a 0.25-inch brass grommet, so they can be nailed or screwed to equipment racks, brackets, shelving, walls, and ceilings, keeping cords safely out of the way.

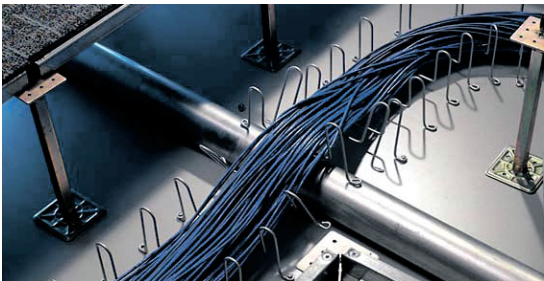
- Available in three models: plain, grommet, and buckle
- 0.75- x 9-inch hook-and-loop tape
- Comes in black, with other colors available on request

Best For: Data centers in need of an easy way to better organize and manage cabling.

Price: \$7.50 (plain, pack of 10); \$9.95 (grommet, pack of 10); \$12.97 (buckle, pack of 10)

Contact: (866) 207-6631 | www.rackmountsolutions.net

Snake Tray Bendable Cable Trays



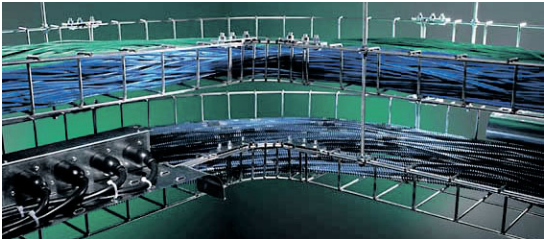
Hand-bendable cable trays from Snake Tray can be mounted directly to the floor or suspended from access floor pedestals. Trays bend around obstacles and install quickly via built-in mounting hardware. Snake Canyon and Snake Tray Bendable systems can be stacked for low-cost shipping and easy handling. Additionally, Snake Canyon systems can be immediately integrated with structural elements already in place in access floors to create an underfloor cable management approach that drastically reduces installation costs.

- No onsite fabrication required
- Trays connect together with one connector
- Mount to floor with built-in mounting rings
- Open architecture allows for loading cables from any direction
- UL Listed
- One-piece drop-in module
- Available for all floor types
- Movable and reusable
- Design ensures proper airflow
- Power module accessories available

Best For: Government, retail, education, financial, industrial, marine, and other industries.

Contact: (800) 308-6788 | www.snaketray.com

Snake Tray Mega Snake Cable Management Solutions



The high-capacity, overhead Mega Snake cable tray comes in premanufactured sections with a built-in mounting system for quick installation. Accessories include a series of power modules that deliver power overhead quickly and efficiently.

- Patented accessory rail for hanging additional cable trays, patch panels, or power modules
- Trays stack together to save on shipping
- Built-in suspension system eliminates mounting hardware


Best For: Companies with high-capacity cable management needs.

Contact: (800) 308-6788 | www.snaketray.com

KVMs

Product

AdderView CATxIP 5000



Description


The AdderView CATxIP 5000 is the culmination of Adder's KVM over IP expertise to date. This new device offers four non-blocking simultaneous IP connections together with a local port (five separate users) and allows the user to control 16 separate devices. The AdderView CATxIP 5000 is small and compact, enabling you to fit two units side by side to support 32 computers and 10 sessions in just 1U of rack space.

- Four simultaneous users connect via IP to any of the 16 connected devices
- Direct connection for one local user to connect straight to the switch
- LDAP integration
- Integrated RS-232 control for managing external devices
- ADDER.net management software automates the task of managing network control hardware

Best For: IT administrators who need to control a large group of computers over IP from a single KVM switch.

Price: \$1,750

AdderView PRO MultiScreen




The AdderView PRO MultiScreen is a professional-grade KVMA switch that delivers ultimate flexibility for users who want to share high-resolution screens and modern USB peripherals between multiple computers. The AdderView PRO MultiScreen enables up to four multihead computers to be controlled from a single high-resolution KVM console using either dual-link DVI or high-definition analog video links.

- Features Adder's True Emulation technology, which ensures that the full characteristics of the connected USB keyboard and mouse are passed to every system
- Dual-link DVI-I with extended profile DDC EDID
- Includes two independently switchable USB 2.0 channels and an audio channel
- Supports resolution of 2,560 x 1,600
- Broad USB 2.0 Hi Speed device support
- Available in dual-, triple-, and quad-head versions

Best For: IT administrators, post production, graphic designers, detailed medical imaging, and broadcast studio professionals.

Price: \$1,795

Black Box ServSwitch Agility



The ServSwitch Agility from Black Box can function as a KVM switch, a sharing portal, or a DVI extender, depending on how it's configured. Admins can set it up as a point-to-point KVM extender for KVM switching, single-target sharing, or multicasting. Black Box's iPATH system lets IT administrators configure devices, users, and channels and features an on-screen dashboard that provides an overview of the entire system.

- Flexible topology for KVM extension
- Delivers digital video with no loss, minimizing bandwidth use while maximizing the user experience
- Features keyboard/mouse emulation and emulation for other standard human interface devices, such as touchscreens or flash drives
- Distance is limited only by your network capabilities when you use network switches
- Mounting options include rack mounting, desktop, and wall mounting


Best For: Health IT, command and control room setups, media post-production, and digital signage environments.

Price: \$2,045.95

Contact: (724) 746-5500 | www.blackbox.com

Product

Minicom Smart 232 IP Switch



Description


The Smart 232 IP Switch from Minicom is a multiuser, remote access IP KVM switch for data center and server room rack environments. The Smart 232 IP allows two remote administrators and one local user to access and control up to 32 servers through a standard Web browser. The Smart 232 IP measures 1U for convenient rack mounting with the included rackmount kit.

- Three simultaneous KVM users (two remote and one local) and two additional serial session users
- Utilizes the highly secure 256-bit AES encryption protocol with multilayer user rights
- Absolute mouse support means no need to change mouse settings in Windows OS
- Innovative Minicom KVM over CAT 5 technology
- Multiplatform support for PS/2 and USB
- Extends distance between servers and switch up to 30 meters/100 feet
- Seamless power control

Best For: Companies in need of a versatile, high-performance KVM with central management capabilities.

Price: \$3,495

Opengear IP-KVM-1001




Opengear's IP KVM is a one-port KVM over IP switch with both USB and PS/2 connectors for server and client connections. The IP-KVM-1001 is also equipped with dual RJ-45 10/100 Ethernet ports, USB connections, virtual media options, and a local KVM interface for direct access.

- Cost-effective 0U device for KVM control at the rack or remotely over IP
- Access systems during boot up, BIOS, and frozen OS conditions
- No client software
- Secure, encrypted browser sessions with authentication
- Deliver patches/upgrades as if onsite
- Console access to switches, routers, PBXes, or an external modem

Best For: IP-enabling analog KVMs and avoiding the single point of failure found in high-density KVM appliances.

Price: \$345

Rackmount Solutions CyberView Matrix High-Density CAT 5 KVM (UIP-3202)



The CyberView UIP-3202 from Rackmount Solutions is a 1U high-density CAT 5 KVM switch with 32 ports. It offers a maximum distance of 40 meters (130 feet) between your server and KVM switch with the rear cable management using CAT 5 cords. With the UIP-3202, you can mix PS/2, USB, and SUN with multiplatform switch capability. A second user can work securely over 128-bit encrypted IP access using the Web interface to control multiple servers down to the BIOS level.

- Use of the RJ-45 CAT 5 interface allows for a higher number of ports in smaller density
- Traditional CAT 5 cords provide simpler cable management compared to coaxial cables
- 128-bit secure browser-based user access from anywhere in the world over IP
- Advanced user profiles and configurable OSD hotkey combinations

Best For: Enterprises that need a KVM switch that offers increased density, increased distances, enhanced cable management, and multiplatform capabilities over traditional KVM switch platforms.

Price: \$1,543

Contact: (866) 207-6631 | www.rackmountsolutions.net

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Nathan Lake

Black Box ServSwitch Freedom



The Black Box ServSwitch Freedom is a four-port switch that works as if there is an extended desktop on a single computer, except that the user is accessing the desktops of four different PCs. Once the screen layout is configured, the user moves the mouse cursor over the X and Y borders to switch PC access. The ServSwitch Freedom supports a mix of USB peripherals, and it works on Windows, Linux, Mac, Sun, and NetWare systems.

- Makes for speedy switching between monitors from a tradeshow floor
- A flexible, four-port, professional-grade switch for simplifying USB keyboard/mouse access to multiple computers
- Enables a single user to switch between four monitors and attached CPUs and share USB peripherals between them
- Features two independent USB 2.0 channels
- Supports “quick-fire” switching via hotkeys, a mouse, or front-panel buttons
- Features stereo audio

Best For: Command and control centers.

Price: \$495

Contact: (724) 746-5500 | www.blackbox.com

Broadrack Saturn 8D



The Saturn 8D is a modular, eight-port DVI USB KVM switch with an audio switching function for Gemini and Unicorn consoles. It gives admins control over eight USB-enabled multimedia computers with DVI video interfaces, using keyboard hotkeys to select the computers, USB device hub port control, and audio channels. It's TMDS compliant to support DDC2B emulation and HDCP compliant for digital content protection.

- Eight-port DVI USB KVM switch with audio switching
- TMDS signal pass through
- USB keyboard and mouse support
- Support for Windows 98/SE/ME/2000/XP/Vista, Linux, and Mac OS
- Built-in two-port USB 2.0 device hub for sharing high-speed USB devices
- Supports resolutions up to 1,280 x 1,024

Best For: Organizations that need a KVM with support for digital video, USB devices, and audio switching.

Price: \$499

HP Server Console Switch G2



The Server Console Switch G2 from HP integrates KVM and serial devices into a single management console for all of a data center's servers, network devices, and infrastructure. The G2 requires no software to be installed on the target servers, and it uses CAT 5 UTP cables between switch and server to improve cable routing and allow for field termination of custom cable lengths. The switch integrates with the HP IP Console switch to ensure that local KVMs can be integrated smoothly and easily into a KVM/IP remote management setup.

- Offers local console, USB, keyboard, and mouse support
- Scalable to 256 servers
- Integration with iLO and the HP IP Console Switch ensures that the local KVM user and remote manager work smoothly together
- Serial, PS/2, USB, and BladeSystem interface adapters to integrate all servers and devices into a single KVM infrastructure
- CAT 5 KVM cabling means minimal cabling in the back of the rack to ensure clean airflow and maximum cooling for today's dense data centers

Best For: Small and midsized businesses that need expandable support or enterprises that want a cost-effective KVM solution in a managed data center.

Price: Starts at \$769 for eight ports

Trendnet TK-804R



Trendnet's eight-port TK-804R KVM switch features an on-screen display that lets you manage multiple computers with just one keyboard, monitor, and mouse. It supports USB and PS/2 interfaces on the console side and USB interface on the PC side. Users can switch between PCs using hotkey, push button, or on-screen display for flexible management and can hot-plug PCs quickly to avoid downtime.

- High video quality; supports up to 2,048 x 1,536 resolution
- Advanced adjustable auto-scan modes for monitoring multiple computers
- LED display for easy status monitoring
- Password protection with auto timeout logout
- Auto-detect power module bank number when daisy-chaining
- Built-in daisy-chain port for cascading up to 16 levels (128 computers) of up to 30 meters total distance
- Beep alert for port switching confirmation
- Standard 19-inch 1U rackmount design

Best For: SMEs that need to monitor multiple PCs quickly and efficiently.

Price: \$299.99

Trendnet TK-IP101



The TK-IP101 from Trendnet is a one-port KVM over IP switch that provides cost-effective remote server management for multiple users, regardless of server status. It eliminates the need to physically be in the server room to troubleshoot, reboot, and edit pre-boot functions. The TK-IP101 gives admins highly secure access to both Windows and Java-based clients. The TK-IP101 supports four concurrent logins with up to 16 active user accounts.

- Save time and resources by managing resources remotely
- Centralize management of multiple servers when connected to a conventional KVM switch
- Multiple user access control
- Crisp 1,600 x 1,200 resolution
- Intuitive Web user interface permits upgrades and backups
- Supports user-friendly Telnet sessions and FTP access
- Use with TRENDnet's TK-RP08 to control on/off power cycling of multiple devices remotely
- Works with LDAP, RADIUS, and Active Directory servers
- Supports Ethernet RJ-45 and PPP connection over serial RS-232 interface with data rates up to 1Mbps

Best For: IT staff that want to control BIOS-level functions, Windows-based applications, and other interfaces from a single intuitive Web user interface.

Price: \$499.99

Trendnet TK-RP08



The TK-RP08 from Trendnet is an eight-outlet remote power controller that provides remote on/off power control for devices in the network. With the TK-RP08, admins can service, reboot, and troubleshoot a network from one computer system. It can cascade up to 16 rack-mountable units and manage up to 128 total power outlets.

- Allows remote power control of eight electrical outlets using ASCII commands
- Numerical module display identifies power module bank number for each cascaded unit
- Service, reboot, and troubleshoot the network from any location when used with the Trendnet TK-IP101 KVM over IP switch
- 19-inch metal rackmount case
- Intuitive management interface
- Numerical LED display provides total real-time current loads
- Eight green (on/off) LED indicators monitor AC outlet status and eight red (alarm) LED indicators display power outlet state of failure

Best For: Those that want to save resources by performing power management from one computer.

Price: \$249.99

Verizon iPhone Causes Consumers, Enterprises To Consider A Switch

The recent announcement of Verizon's plans to carry Apple's iPhone has convinced 26% of current iPhone users to switch to Verizon from AT&T, according to a 4,050-respondent survey conducted by Change-Wave Research. Some analysts say there is one overwhelming reason why consumers might make the change.

"We've heard a number of complaints from people saying they are frustrated and willing to switch because of frequent dropped calls on AT&T's network," says Ken Dulaney, a distinguished analyst and vice president at Gartner. In fact, according to ChangeWave's findings, 42% of AT&T customers complained about poor reception, while 27% said they are frustrated by dropped calls.

Consumers have demanded a Verizon iPhone for years, but the real question for some is whether enterprises will be willing to switch to a new network even though the AT&T and Verizon iPhones are almost identical. Dulaney says it has much more to do with business deals than carrier preference.

"For companies, it really depends on the contracts that they have with their carrier and if it will be too expensive to break those contracts rather than wait for them to run out," Dulaney says. "Businesses based in Seattle or San Francisco may be more willing to switch because of their overall level of frustration."

Another factor for businesses is that Verizon iPhone users will be unable to use data and voice at the same time. However, Dulaney says that most people are more worried about being able to make and receive calls at any given time.

Will Plans Make A Difference?

While businesses weigh a change based on contracts and necessary features, they must also consider pricing. Dulaney says that there is no clear advantage to AT&T or Verizon in terms of plan or phone prices. He also believes that even though Verizon will offer an unlimited plan at the time of the iPhone's release, they will more than likely implement a tiered plan similar to AT&T once they see how much traffic the iPhone can create.

"Data is like water," Delaney says. "You can't just have everybody use an unlimited amount. Verizon hasn't had the iPhone yet so they don't know what network problems will occur. They may have an unlimited plan at the start to entice customers, but they will probably move to tiered later on."

by Josh Compton



The True Total Cost Of A Data Center

Don't Overlook Vital Factors

by Bridget Mintz Testa

• • •

BUILDING A NEW DATA CENTER is simultaneously an exciting and frightening prospect. A new data center can certainly enhance business operations. At the very least, constructing a new data center gives your enterprise an opportunity to correct old mistakes and do things right this time around. To keep the reality of building the data center as exciting as the prospect, re-evaluate and question everything you think you already know about data centers, from how they're designed and built to how they operate on a daily basis. Pay special attention to the price of money and the long-term costs of power and maintenance.

Money

Data center construction costs are unquestionably the largest expense an enterprise will encounter. "So . . . look at the capital outlay—the acquisition costs and the capital costs for modifications to the building," says Steve Flaig, director of marketing for Digital Realty Trust, which owns and operates more than 90 data centers worldwide.

Unfortunately, calculating this capital expense, which can start at \$15 million for a typical 10,000-square-foot data center and top out at more than \$100 million for a high-end one, can be a lot harder than it seems because so many factors get overlooked. "Traditionally, data centers were built out like a big white box with the same power to everywhere," says David Cappuccio, a managing vice president and chief of research for infrastructure at Gartner Research. "Now, people are realizing that they have higher density power requirements in some places."

The standard power density assumed for a data center is 150 watts per square foot, based on a rack power consumption rate of 4 to 5 kilowatts. According to Blake McLane, senior vice president of strategic business development for CyrusOne (www.cyrusone.com), a wholly owned business of Cincinnati Bell and the No. 5 enterprise data center colocation provider in the world, a rack loaded with watercooled blade servers can consume 1,000 watts per square foot, more than six times the power density of the standard.

Neglecting to account for the differences when you're designing your facility can translate into a greatly underpowered data center or one that goes way over budget during construction. In the first case, if your design assumes the standard and you build accordingly, your data center will be

underpowered if you need high-density spaces. On the other hand, if your design calls for a higher level of redundancy than you really need, you'll be spending a lot on excess cooling and power equipment and get an overpowered data center to boot.

If you know you need high-density spaces but budget for the standard, you are going to go overbudget in construction. That's because the difference in construction costs between the standard and high-density spaces are a few thousand dollars per square foot. That difference is really the cost of the additional cooling and power equipment needed to support the high-density servers. But the additional equipment has to be bought and installed. If you don't budget for it first, then realize you need it in the midst of construction, you will go overbudget in the build phase. And you'll use more power than you expected in the long run, too.

Power usage isn't the only important factor some enterprises overlook when planning for or building data centers, especially when it is something that is done only when the need arises and personnel are not experts in building such facilities. In such cases, "there is no knowledge capture in the corporation," Cappuccio says. "They are always re-inventing the wheel." Companies in this situation base their needs on whatever they currently have, assuming that their data center spaces are used efficiently. "That isn't true," Cappuccio says. "They can get two to three times as much capacity as they're using right now."

Many other important factors frequently get overlooked during the construction of a data center. These include the time it will take for the construction, which is at a year up front (for planning and additional time for permitting) and at least two or three years if everything goes perfectly; the taxes and depreciation for the electrical and mechanical components; the costs of tying up experts, such as the CIO and other specialist personnel, for several years; and above all, the failure to consider the price of money, i.e., the cost of the loan. "You need to find a financial sherpa right up front," advises Flaig.

Power

After construction on a data center is complete, the largest ongoing cost an enterprise will face is the cost to power the center. McLane explains that it used to be common, at least in some industries, for a data center to be located within a larger building on the enterprise's campus. In such cases, the enterprise had no idea how

much power the data center was using because it only looked at the total power consumption for the entire structure.

Even today, total power consumption can easily be misunderstood. "Data center power usage has peaks and valleys," says Flaig. "It isn't constant. If a company doesn't understand power usage, it will over-buy or underestimate power consumption. In the second case, your data center can't accommodate your needs in a year."

Getting power costs right means accurately assessing the true power densities of different sections of the data center, accounting for redundancy—more redundancy means more equipment and thus more power consumption—and using smart architectural design approaches such as outside-air cooling to bring down costs. Cappuccio advises using the cloud for functions that rarely have any urgency,

Key Points

- The costs of building a data center are the largest single expense and the primary capital expense, but these costs vary greatly depending on anticipated power density and tiers of redundancy.
- Power is the greatest continuing operating cost for a data center. That cost can be reduced before operations begin with proper design and up-to-date cooling strategies.
- Maintenance and prevention expenses, including the necessary personnel, are often overlooked when planning a data center. Make sure to include them in the operating budget.

such as testing, backup, and archiving. And increase the capacity of your data center. "The average rack[s] in the United States [are] at about 55% capacity because they get too hot," Cappuccio says. "Design to fill the racks to 85% or 90% of capacity, and figure out the cooling you'll need. You can build smaller data centers and get all the capacity you can use."

Maintenance & Prevention

"Data center decisions are typically made by boards, C-level executives and finance people," Flaig says. "They'll include the projected costs for power and IT personnel, but they don't budget for personnel like security and maintenance. They don't allocate money for break-fixes."

These top executives also don't think about the costs of equipment upgrades and replacements or preventive maintenance. "The major capital components, like chilled water towers, compressors, CRAC units, PDUs, and the generator sets, require maintenance and upkeep and have different life spans," says McLane.

And what about power outages or natural disasters such as hurricanes? "Preventive maintenance is the cost of keeping two to three days of diesel fuel onsite," McLane says. "In places like Houston, we have 10 to 12 days of diesel fuel on hand. The fuel must be treated monthly to prevent bacterial organisms from growing. We also run the diesel generators every two weeks."

Correctly estimating the total costs for a new data center is a complex job that shouldn't be undertaken without all the necessary information. That includes expertise in local building costs and formal financial savvy about the costs of loans, depreciation, and taxes on building components and the like. ■

Additional Resources

Various types of data center construction and operation guidelines are available from a number of well-known industry sources, both proprietary and free, like The Green Grid (www.thegreengrid.org) and the Uptime Institute (www.uptimeinstitute.org). Alternatively, some companies in the industry also provide white papers, stats, and other useful information on their Web sites. The ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers; www.ashrae.org) and the TIA (Telecommunications Industry Association)'s Telecommunications Infrastructure Standard for Data Centers 942 and its addendums (www.tiaonline.org/standards) provide some overall guidelines, but make sure you understand the assumptions underlying those standards and that they apply to your project. Then get ready to have an exciting adventure as you build your new data center.

A New Frontier for EDA

The landscape of the electronics industry is changing.

And it's all about the apps. Building complete systems that are application-ready is now as fundamental as delivering power-efficient silicon. There are a range of possibilities out there for EDA, but realizing them means going in a different direction.

Cadence focuses on application-driven approaches to designing, verifying, and implementing advanced chips, SoCs, and systems. And we build innovative capabilities for IP creation, selection, integration, and optimization. Along with our strong network of partners, we tackle what's now and survey what's next. And from our point of view, a revitalized industry is on the horizon.

Discover more at www.cadence.com/newfrontier

Tips & Advice
For Data Center Managers

Being a successful data center manager involves having the right skills. We talked with experts to find out more about the most important skills and know-how needed.

Time Management Tips | 26
■ With scores of unexpected fires to put out every day, IT managers usually don't have much time left over. But it doesn't have to be that way, with more effective time management strategies.

Improving Your Management Skills | 27
■ Whether you're getting ready to make the move into management or have been in a leadership role for a while and want to improve your skills, there are a handful of areas on which you should focus.

The Budget Process | 28
■ Here are some budget tips for data center and IT managers looking to improve their budget management skills.

Top Skills In Demand | 28
■ The keys to success for the typical data center manager are vastly different today than they were even a few short years ago. Today's data center leader is a much more broadly skilled resource.

Time Management Tips

Make The Most Of Every Day By Maximizing Productivity

by Elizabeth Millard
• • •

WITH SCORES of unexpected fires to put out every day, IT managers usually don't have much time left over to do planning, work on preventive maintenance tasks, focus on personnel issues, or even keep up with industry trends. But it doesn't have to be that way, with more effective time management strategies. Here are some top tips for gaining more efficiency without skipping vacations or working late.

Delegate, Delegate, Delegate

"Too often, IT personnel get steeped in tactics and don't delegate well enough, becoming a single point of failure," says Dr. Mickey S. Zandi, managing principal, consulting services, SunGard Availability Services (www.sungardas.com).

He notes that IT managers need to have the resources available to assign a task with the confidence that it will be done correctly. This might mean bringing in outside consultants, increasing the training budget so more areas can be covered in the long term, or expanding the roles of staff members. Part of delegation is also holding staff accountable for completing an assignment, so Zandi suggests putting a system in place that tracks progress on delegated tasks and creates a deadline.

"New tasks can't be open-ended," he says. "A time limit must be set with the creation of each task, and people need to be held accountable."

Stay Consistent & Clear

While delegating, an IT manager should be careful to establish a routine in terms of schedule and updates. Trying to chase down progress reports or micromanage an employee will end up taking more time than necessary, so creating a sense of consistency is crucial.

"Once IT managers set a routine of how activities will be done, they need to stick to the pattern so as not to confuse the staff," Zandi says. "Each task needs to be achievable and quantifiable. If a task has ambiguous instructions or no one responsible, that's a recipe for disaster."

Managing time for an IT staff should be a matter of minimizing surprises, he adds. The manager should know who is doing what, as well as when and how each task is getting done.



Key Points

- Delegate tasks to employees or outside consultants, and make sure that they do those tasks on time and in a predictable way.
- Establish deadlines for all tasks, even for open-ended projects with numerous steps until completion.
- Find a management tool or system that works to organize and prioritize tasks and can scale up when tasks become more numerous or complicated.

assignments. In industries such as healthcare and banking, where data is highly sensitive and there are legal ramifications for sharing data, automation can ensure accuracy, privacy, and timeliness, Blackwell believes.

"Automating workflows in an organization offers greater efficiency and higher accuracy with fewer resources," he says. "Particularly when budgets and staffing are tight, automation allows managers to get regular jobs done with little or no oversight."

Standardize Processes

One of the most challenging strategies in a data center can be standardization, as it takes time to put predictable procedures in place, but it's worth the effort, notes Kris Domich, principal consultant at Dimension Data (www.dimensiondata.com). Especially with implementation of new hardware and software and maintenance of existing equipment, standardizing processes can potentially cut down on support needs in the future.

Establishing a clear, easily followed maintenance schedule can free up time in the future by creating a system that boasts less risk of downtime. As part of the schedule and any other process, Domich advises allowing very little room for exceptions once the procedures have been put in place.

In general, he says, IT managers should ensure that they have a clear direction and a set of goals around whatever process or procedures they intend to make more efficient. Then, they should take a look at how the process is being accomplished currently and where improvements can be made. By tweaking any areas or processes in the data center that can be made more efficient through automation, an IT manager can develop a system that is far more effective in terms of time management.

Use Deadlines Wisely

Similar to delegation, tasks taken on by the IT manager should have the same type of consistency and clarity as those given to others. Establishing deadlines, even for open-ended projects, can reduce the amount of time spent on large tasks and break big projects into more manageable pieces.

For example, implementing a new security policy will have several aspects to the strategy, such as writing the policy, putting software in place for enforcement, and training end users. By setting deadlines and

goals for each of these steps, an IT manager will reduce the risk of wasting time in moving from one step to the next.

Tap Into Automation

For the type of common, repetitive tasks that tend to take up a large chunk of a workday, automation can be a boon, according to Thom C. Blackwell, product manager at Boston Software Systems (www.bostonworkstation.com).

In particular, user management can benefit from automation, freeing managers from such tasks as password updates, removal and addition of users, and rights

Top Tip: Use A Management Tool

There are many feature-rich software applications that can help an IT manager become more organized by tracking projects, creating schedules, and issuing reminder alerts. But even a simple spreadsheet can be effective if it's used properly. The most important aspect of any management tool is that it streamlines tasks and keeps a manager on track—if an application takes too long to navigate or offers too many functions that go unused, it's time to find a different tool. But it's worth taking the time to discover what works for an individual manager, notes Dr. Mickey S. Zandi, managing principal, consulting services, SunGard Availability Services (www.sungardas.com). "Having and using a time management tool that organizes and prioritizes your time is an essential first step for success," Zandi says.

Improving Your Management Skills

Good Leadership Paves The Way For Better-Performing Teams

by Julie Knudson

IF PRESSED, most people could probably name a former or current boss who could use a few pointers on being a good manager. The transition from worker to leader can be a tough one, and it's all too common to assume that technical competency results in the ability to lead a team of technical people. Wayne Brown, PhD, CEO of the Educators Serving Educators division of Excelsior College (www.eseserves.org), helps IT professionals develop good leadership and management skills. He says that a number of factors come into play when transitioning into a leadership position, and technical skills are only one part of the equation. "I think it's a false assumption that you're good at your job so you'll be good at being a leader," he says.

The reliance on strong technical skills is even more pronounced in data center management. "People typically get promoted in the IT business because they're the go-to folks. They know the business, they know the technology, they know what they're doing, and at the end of the day, they rise to the top and they get the management positions," says Ken Stephens, senior vice president of strategy and transformation at ACS (www.acs-inc.com). "Where they typically fall down is in the management of their team. They're good leaders, but the softer skills—managing people, paying attention to the development of their team, developing the full complement of skills within their teams—those don't happen very much."

Whether you're getting ready to make the move into management or have been in a leadership role for a while and want to improve your skills, there are a handful of areas on which you should focus.

Understand The Business You're In

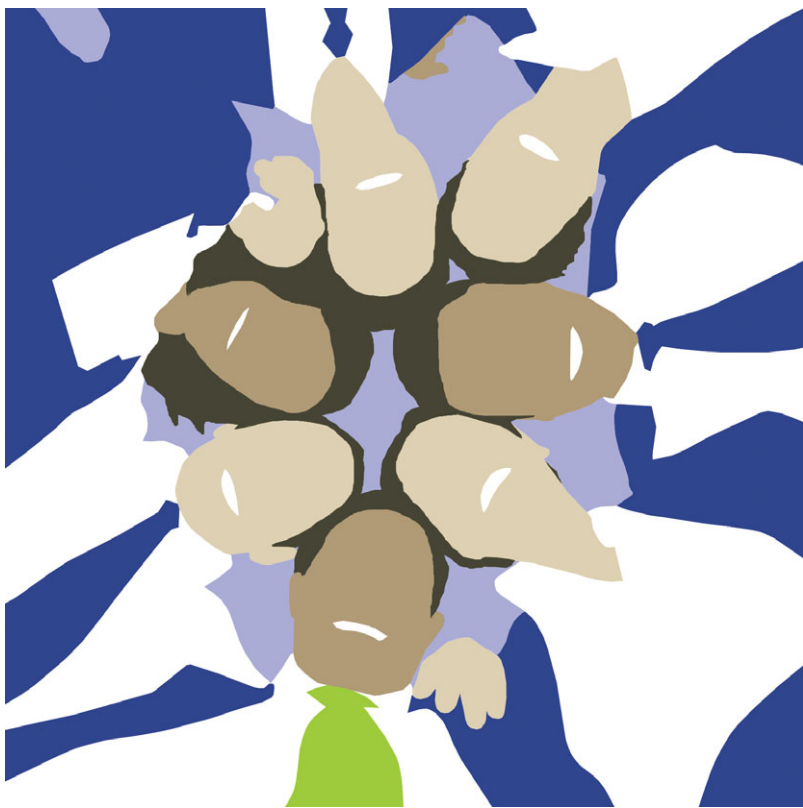
Helping your team achieve its goals means getting the resources it needs, including personnel, funding, and training. You'll be in a much better position to negotiate successfully for the things your department requires if you understand your organization's core business and where IT fits into that. Your department's goals must support the overall business structure. "At each level of the management chain, we get exposure to where we're going as a company, where the business is headed, how the industry is changing, and how it impacts us," Stephens says. "The big challenge that we have is to communicate to the masses on a routine basis where we're going and what we're trying to achieve."

Brown encourages managers to focus their group's activities around the organization's objectives. "You have to understand

Key Points

- Link your team's efforts to the organization's overall mission and break down those overarching goals into smaller, more manageable tasks.
- Don't be shy about asking more experienced managers for mentoring and advice.
- Good communication is your most powerful management tool.

how the organization operates. What's the business of the organization? Then help your group understand the business," he advises. "There is a business to this, and the only reason we exist is to help people with that."



articulate a business need and the IT manager needs to be able to translate that back to the technical person," Brown says.

It may sometimes be difficult to directly align every individual goal with an organization's mission statement, but without a tangible link between the two, your employees are likely to begin wondering if their contributions really matter. "You've got to show employees the structure that you expect to have an operation run inside of, bring them into that structure, and make them part of it," explains Jack Cullen, president of Modis (www.modis.com).

Find A Good Mentor

Many data center managers know the value of good mentoring when it comes to gaining technical expertise, but working with an experienced mentor is also a great way to cultivate management skills. Cullen agrees, saying, "There's no question there's tremendous value in [mentoring], and I'm a big believer in it." A mentor can pull from his own background to help you navigate difficult issues and identify better ways to lead your team.

Though Brown, Stephens, and Cullen all agree that mentoring is a critical component in developing good leadership skills, they also universally lament the fact that very few organizations implement any sort of formal program. "I know of only a handful of companies that have true mentoring programs that are routinely pursued at all levels of the organization," Stephens says. Even without structured mentoring support, he feels that finding a mentor is well worth the effort. "The individuals who seek out mentoring typically have a much higher success rate as they move up the corporate ladder than those who do not," he says. If you're lucky enough to work for a company that offers a mentoring program, take advantage of it. If not, don't despair—professional organizations and industry groups are also good places to find experienced mentors.

Learn To Translate Strategy Into Action

The directives coming down from senior management may not resonate with everyone on your team, likely because your organization's overall mission is broad while any one person's individual role in that mission is more focused. Your job as a manager is to process those high-level goals down into discrete tasks or projects that your team can successfully tackle. "The executives

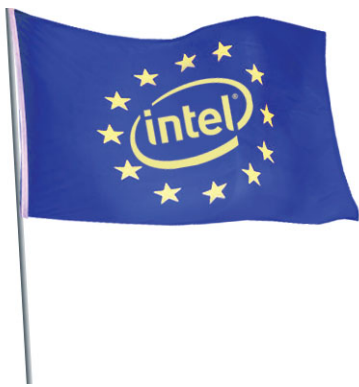
Top Tip: Communication Is Key

Solid communication skills are one of the most important attributes of any good manager. "Too often, the message of what you want isn't communicated to the technical person," says Jack Cullen, president of Modis (www.modis.com). Employees will act on the information you provide, so strive to give them clarity at every turn. Expectations should be clearly explained, and any feedback—good or bad—needs to be useful and understandable. Get in the habit of asking your employees if they feel they have enough information to do their jobs—their answer might surprise you.

When developing deliverables for new projects or setting goals for the coming year, take the time to talk with your employees about what they feel is the best way to accomplish everything on their plate and what tools they need to be successful. "Technical folks quite often feel that they're left out of the decision-making process," Cullen says. "They're given these tasks and just told to get them done." Instead, actively solicit your group's input and encourage team members to look for innovative solutions to the challenges in front of them.

Intel/McAfee Deal Gets Clearance From EU

Chip giant Intel has been given approval to move forward with its planned purchase of security company McAfee, following an investigation conducted by the European Commission. Intel plans to integrate McAfee's security products into its chips, which raised concerns that this would result in an anti-competitive market given Intel's dominance in the chip space. Intel has committed to ensuring interoperability between its chips and competing security vendors' products and to fostering fair competition, which the EU deemed sufficient to approve the deal. The purchase is worth \$7.7 billion and is believed to be an effort on Intel's part to attract lucrative government contracts.



EMC Reports Record Financial Results

EMC's fourth quarter financial results saw record-breaking highs. Year-over-year revenue for the quarter was up 19% to \$4.9 billion, quarterly GAAP net income was up 61% to \$628.6 million, and non-GAAP income was up 32% to \$920.1 million. For the year, those three categories saw increases of 21% (\$17 billion), 75% (\$1.9 billion), and 46% (\$2.7 billion), respectively. EMC also enjoyed record quarterly and full-year cash flow—operating and free cash flows were up 50% (\$1.5 billion) and 54% (\$1.2 billion), respectively. Altogether, EMC's cash and investments totaled \$9.5 billion at the end of the quarter.

U.S. Broadband Speeds Lag

Broadband speeds in the United States lag behind those of other countries, with just 34% of Internet connections in the United States achieving speeds of 5Mbps or faster. According to Akamai's "State Of The Internet" report, the United States ranks ninth in the world in terms of broadband speeds, an improvement over 2009, when the United States ranked 12th with just 24% of users having access to broadband connections of 5Mbps or faster. South Korea, the world leader in broadband speeds, has more than 72% of its Internet connections reaching 5Mbps or faster. Second is Japan at 60%; Hong Kong and Romania also have better than 50% penetration. Akamai reports that globally, 22% of Internet connections are 5Mbps or faster.

2010 Sees Jump In Malware Attacks

The volume of malware being sent out nationwide is increasing significantly, according to the "Security Threat Report 2011" released by Sophos. Last year, SophosLabs analyzed 95,000 distinct pieces of malware each day, which is twice that which appeared the previous year. Social networks are being hit particularly hard. The percentage of social networking users contracting malware from social media sites reached 40% in 2010, up 4% from 2009. Spam received from social networks rose 10% during the same time frame, with phishing intrusions jumping 13%. Sophos reports that 16% of the world's spam originated from the United States, the highest of any nation.

The Budget Process

Balancing The Budget Is A Question Of Planning & Streamlining

by Chris A. MacKinnon

WITH THE RECENT SQUEEZE on the almighty dollar, you can almost hear CEOs in unison across the country telling data center and IT managers to cut the bottom line. But many managers don’t like to get involved with the budget process because there is too much infrastructure to worry about. However, according to Darin Stahl, lead analyst with Info-Tech, IT leaders should start from the premise that the annual budget process determines whether

Top Tip: Be In The Know

Darin Stahl, lead analyst with Info-Tech, says IT leaders should fully understand the organization’s accounting approach before budget preparation. For example:

- Cost centers:** Where does IT fit?
- Capital expenses and operating expenses:** Does it make a difference for IT?
- Revenue and expenses:** Should I worry about both?
- Multi-year projects:** How will I ensure future funding?
- Non-discretionary and discretionary expenses:** What do I need to know?

IT will have the staff and dollar resources that it needs to deliver expected services. With that said, here are some budget tips for data center and IT managers looking to improve their budget management skills.

Know Your Current & Future Capacity Needs

Nick Johnson, director of marketing at Uptime Software (www.uptimesoftware.com), says the last thing your boss or CFO needs is a surprise request for additional hardware during a fiscal year. “Baseline your physical, virtual, cloud compute, and storage capacity and understand growth rates,” Johnson advises. “Don’t forget to talk to business units and understand if they are undertaking any projects that may increase demand on IT infrastructure (for example, a massive marketing campaign).”

Johnson says using capacity tools for physical, virtual, and cloud capacity trending and planning and using graphs and reports will help management understand why and when the business will need the additional capacity. “Business managers will be able to understand a capacity trend graph and clearly see when capacity is an issue,” he says. “That makes your case for capacity easy. Also, communicate expenditures that need to be made on a quarter-by-quarter basis in order to set expectations.”

Watch The Downtime

According to Todd Finders, director of global data center services at Emerson (www.emersonnetworkpower.com), IT and data center managers should consider the cost and overall impact of downtime as part of the budgeting process. “According to the Ponemon Institute’s recent national survey on data center outages, the majority of companies have experienced unplanned downtime in the past two years, yet most do not have the adequate practices and investments in place to respond appropriately,” Finders says. The costs of downtime add up quickly and include more than just direct costs, as long-term impacts such as reputation damage and opportunities lost with prospective customers must be considered.

“Do not cut corners when availability is at risk,” Finders notes. “It’s also important to know your company’s appetite for risk and the cost of downtime. A financial trading company is a world away from a manufacturing company. Don’t cut corners, but also don’t spend money on items that are not in line with the business objectives.”

Approach With Wisdom

Info-Tech’s Stahl knows that many IT leaders in mid-sized organizations are struggling with the budgeting process.

Key Points

- Downtime costs money, so ensuring that your systems are reliable will save money by preventing customer loss and protecting your company’s reputation.
- Treat the budget seriously. IT budget planning is not a one-time thing; rather, it is an ongoing process of refinement, reporting, and negotiation.
- Do more with less by implementing tools that automate tasks and reduce the need for extraneous staff or spending.

Stahl says the issues they face often manifest in the longer term because of how they approach the budget process and how the process of budgeting is viewed within the organization. “It is not uncommon for the preparation of the budget to be treated as an event rather than an ongoing process of refinement, reporting, and negotiation,” he says. “Budgeting fears are not unfounded. In fact, 45% of people surveyed are very interested in learning about budgeting metrics like estimation and projection, proposals, calculations, and negotiation—regardless of enterprise size or maturity.”

In Stahl’s opinion, many IT leaders work within a budgeting process that focuses on the near-term CAPEX and the 12-month OPEX. This frequently creates a budget environment whereby new business initiatives are rigorously vetted (CAPEX) but past business strategies are not revisited through a needs analysis (beyond capacity management) and become simply a part of the ongoing OPEX. Stahl says IT leaders are then

Top Skills In Demand

What Are The Best Tools To Have In An IT Manager’s Toolbox?

by Carmi Levy

THE KEYS TO SUCCESS for the typical data center manager are vastly different today than they were even a few short years ago. As IT infrastructure increasingly tightens its connection with—and impact on—business performance, the technical, management, and leadership skills required to keep everything humming become ever more complex. It’s no longer enough to be proficient with technology. Today’s data center leader is a much more broadly skilled resource.

“As you go up the IT ladder, your technical skills matter far less than your business and ‘soft’ skills,” says Brenda Kerton, owner and principal consultant of Capability Insights Consulting. “You certainly still need to be able to understand technology discussions, and you need to know if the skilled technical practitioners around you are bringing their best to the table.”

Keep the following skills in mind whether you’re hiring data center leaders or pointing your own career in that direction. (For more information on honing the management skills you already possess, turn to “Improving Your Management Skills” on page 27.)

Key Points

- Good communication is vital, using simple messaging that breaks complex issues down into language that’s easily consumed by stakeholders.
- Managers must have business knowledge that relates underlying technologies to specific business operations and outcomes and positions data center leaders as true partners in growing the company.
- People-based leadership that recognizes and rewards team members for their contributions is important for maintaining a good relationship with staff.

Knowledge Of The Supported Business

Data center managers can’t deliver IT solutions if they don’t understand the business needs those solutions are meant to address.

“The IT work you propose needs to be in the context of the goals and directions of the organization,” Kerton says. “You need to be able to suggest IT support—applications or infrastructure—that will enable those goals and directions.”

Kerton adds that IT leaders must be able to articulate the full range of risks,

benefits, and costs in terms that make sense to the business.

“The COO or CEO doesn’t care that a server operating system is going out of service,” she says. “They do care that functions they use are available and supportable and need to know the risk of failure or downtime due to an old operating system.”

Aspirations To The C-Level

It isn’t enough to focus on the data center itself. Truly successful IT leaders look further up the organizational food chain.

“IT managers need to be prepared to have executive-level discussions to determine how IT will make a strategic contribution to business objectives going forward,” says Jennifer Shelton, founder and principal consultant at Fathom Insight Management. “IT must be able to talk about tomorrow, not just today.”

Shelton, whose research focuses primarily on the technology investment priorities of small organizations, says successful IT leaders are focused on figuring out how IT can pay for itself by building revenues, lowering costs, and creating a sustainable competitive advantage. It’s an approach that demands skills in multiple areas, including needs assessment, benchmarking, and creating RFPs,

as well as vendor sourcing, selection, and management.

Decision-Making Acumen

Leaders must continually evolve their ability to make decisions quickly, and often with only partial information.

“You need to help those in your organization understand what they need to bring to you and when for decisions to happen quickly,” Kerton says. “You need to be clear on how decisions are made in the IT organization. Decision-making authority needs to be clearly laid out for all jobs, including yours.”

Kerton adds that IT shops are not democracies, and today’s leaders must be clear about when they’re in input-gathering mode, when they’re delegating decisions, and when they’re making them.

Clear Communication Skills

When something as simple as changing a router’s configuration or updating an in-production application can have significant impact to the businesses that rely on these resources, effective communication skills can go a long way toward avoiding trouble in the first place.

Nital Gandhi, who heads the pre-sales team within the Infrastructure Management Services group at Patni Computer Systems (www.patni.com), says basic messaging may seem like a small thing, but it really isn’t.

“You need to be able to take changes like these and ensure your people tell both their own team members and all external stakeholders what’s coming and how it will change the environment,” she says. “Because if the change does not occur in

held accountable for the long-term costs associated with those past business strategies that have become “legacy.”

Consolidate Tools

Every now and then, it’s important to take an inventory of your tools. “Are you paying for maintenance on IT software that is no longer used? If possible, find a ‘single-pane-of-glass’ tool that does the job of three or four tools and provides insight into your IT infrastructure while helping you communicate IT business value,” says Uptime Software’s Johnson. “New technologies like virtualization and cloud are complicating IT infrastructure, so you need to plan for these changes. Use tools that seamlessly work across physical, virtual, and cloud servers and applications while fitting into your budget.” More importantly, he says, find a tool that makes the increasingly complex IT environment easy to understand and take action on.

Johnson also recommends making the most of a limited staff and budget, adding that you’ll go a long way if you focus on doing more with less. “Implement tools that minimize the need for IT resources (budget or staff time to operate) while providing high value,” he advises.

Finders says capacity needs will continue to rise and so will the need to implement infrastructure solutions that both protect existing data and allow for future growth. “Deploying solutions that are both scalable and interoperable allows decision makers to integrate old and new equipment, enabling them to supplement the data center they have instead of starting fresh—ultimately cutting the bottom line,” Finders says.

an appropriate manner, there will be a lot of people asking a lot of questions.”

Once the basic communication channels are in place, it’s crucial to ensure the messages delivered through them are clear and concise. “A key challenge for most data center managers and IT executives today is the ability to decompose things into their atomic components,” says Christopher Willis, senior director of solutions consulting at Hitachi Data Systems Canada (www.hds.com). “Of course, delivering the service according to given service-level management processes is the ultimate goal, but first, leaders have to decide what they’re serving up.”

Willis says not all stakeholders appreciate the ingredients that make up a complex service. Effective managers can break it all down so that it can be identified, measured, and understood by the constituent businesses.

Strategic Focus

Truly effective data center managers aren’t locked into traditional technology-related role and functional definitions. They must scan the broader environment to understand how new solutions may potentially affect various areas of the business, and they must connect the dots in ways beyond the traditional technology-based IT organizational structure.

“Today, the challenge lies in identifying new technologies before they become available,” Willis says. “None of this is restricted to a single pillar, so you can’t view it in a strictly server-, network-, or storage-focused context. To be truly effective, the IT leader needs to see over the barriers between silos.”



Top Skill: Humanity

The most powerful leadership trait may very well be the one we all learned in kindergarten.

“Treating your people with dignity is key,” says Gubran Gubran, director of systems at QTS (Quality Technology Services; www.qualitytech.com). “It doesn’t matter what culture you come from: I think we all have the same core values, such as integrity, trust, and character. An effective IT manager needs to understand these core values and actively promote them within the team.”

Respect is a fundamental pillar of this capability, as it helps the IT leader articulate the data center and organizational visions and help staff members relate their own roles to them. “When you treat people the right way, they will move mountains for you,” Gubran says.

Apple, Amazon Lead Tablet & E-reader Markets

Apple’s wildly popular iPad is causing world-wide tablet sales to soar, with the tablet market growing 45.1% in the third quarter of last year, according to an IDC report. The iPad took the majority of the tablet market during the third quarter of last year, representing nearly 90% of all tablets shipped. IDC estimates the shipments of tablet devices will continue to increase over time, with 44.6 million units shipped this year and 70.8 million in 2012 (in 2010, about 17 million units were shipped). E-reader shipments are also likely to increase. IDC statistics show that Amazon is the leader in the e-reader market with more than 1.1 million units shipped during the third quarter 2010, giving it a 41.5% market share worldwide.



Google Co-founder To Become CEO

Google announced that co-founder Larry Page will succeed Eric Schmidt as the company’s CEO in April. Schmidt, Page, and co-founder Sergey Brin say the decision is meant to streamline the company’s management structure and regain some of the entrepreneurial spirit Google had in its startup days. Schmidt, who served as CEO for 10 years, will remain as Google’s executive chairman and will work on external business partnerships. In addition to his new role as CEO, Page will also lead technology strategy and product development; Brin will work on strategic projects and new products.

Sale Of Motorola Unit To Nokia Siemens Meets Opposition

China-based telecommunications company Huawei has filed suit against Motorola in an effort to block the sale of Motorola’s wireless networking division to Nokia Siemens. The Chinese company insists that it has no problem with the sale of the division itself; rather, it is concerned that the sale will include products and intellectual property developed by Huawei, resulting in copyright infringement and breach of contract. The two companies have been partners for more than a decade, with Huawei supplying networking products that Motorola sold under its own name. For its part, Motorola says that the claims have no merit and that, pending approval from the Chinese antitrust body, it plans to move forward with the \$1.2 billion sale.

SMBs Set To Increase IT Spending

More than 20% of midmarket companies list operational efficiency and cost reductions as their “top strategic mindset” for IT, according to a new IBM study. That’s down more than 30% from a year ago, indicating companies have a better outlook this year. Of midsized businesses surveyed, 53% plan to spend more on IT this year, signaling that costs may no longer be the dominant driver of IT budgets, IBM reports. In terms of spending priorities, SMBs are primarily interested in customer focus, with 31% of respondents saying customer focus was most important. Revenue growth was the second most important, with 30% listing it as the primary goal.

Report: Uptick In Venture Funding Reflects Growing Economic Optimism

Venture funding continued to show meaningful gains during the end of 2010, according to researchers. While various sectors showed gains and losses during Q4 2010, overall growth was positive. According to a recent CB Insights report, 2010 saw \$23.7 billion of funding across 2,792 separate deals—a 14% growth in funding and a 13% growth in deals over 2009’s totals.

An increase in overall optimism and some large valuations of key companies may help explain the continued increase, along with the fact that the bar was fairly low to begin with, given 2009’s lackluster showing. “First, 2009 was a terrible year for VC, so we were working off a low base, which makes for easier year-over-year comparisons,” says CB Insights CEO Anand Sanwal. “More interestingly, however, 2010 saw a level of optimism creep back into the VC market after the malaise of 2009. This is a function of an uptick in M&A activity; an ever-so-slight opening in the public markets for IPOs; and the traction and resulting large valuations of companies such as Facebook, Groupon, LinkedIn, and Zynga.”

The report notes that a majority of the Q4 2010 deals took place, not surprisingly, in the Internet sector, while green tech and healthcare deals remained flat. Additionally, although California deals were stagnant overall, the state still represented the majority of Internet-related activities in terms of both total deals and total dollars invested, accounting for about 47% of deals and 39% of the dollars invested.

The Year To Come

Sanwal predicts continued good—or at least decent—news in 2011. “Seed VC deals (those generally less than \$1 million) have been increasing, and we see those continuing—and with those, the number of deals will likely stay strong,” Sanwal says. “Funding levels are hard to predict given the influence of a few large deals on the data, but we think that funding will stay at similar levels to 2010 with perhaps a modest tick up.”

The CB Insights report cautions that data can be interpreted differently according to different lights: “For those of you looking for a data point that suggests VC is back and on the road to recovery after 2009’s tough sledding, the eight-quarter high on deals and dollars gives you something to hang your hat on. For those of you who think VC is overheated and we’re headed for a bubble, the eight quarter high on deals and dollars gives you something to hang your hat on. Yes, it’s all a matter of perspective.”

by Rod Scher

Enterprise Videoconferencing

Rethink & Reshape Your Communication Landscape

by Christian Perry

THE AGE OF THE BIG INEXPENSIVE network pipe is officially upon us, in turn giving rise to a videoconferencing explosion among enterprises of every size. No longer handcuffed by strict travel budgets, today’s enterprises can now reap the benefits of videoconferencing technology that continues to be refined by a wealth of manufacturers and developers. In fact, according to Network Instruments’ State of the Network Global Study, nearly two-thirds of today’s companies have implemented videoconferencing technologies to some extent, and that number is expected to reach 90% in the next two years.

Key Points

- Videoconferencing can extend to many parts of a business, so think closely about your communication needs before moving forward with an implementation.
- Today’s equipment includes features that were once considered luxuries, so experts recommend looking beyond the standard functions to take advantage of cutting-edge innovations.
- Because videoconferencing can stress an internal network, IT staff must ensure the network infrastructure can handle video and current business applications simultaneously.

“Videoconferencing is no longer considered a luxury but has become the standard,” explains John Belisle, design engineer at CCS (www.ccsprojects.com). “Organizations and enterprises are recognizing the cost savings, the productivity increases, and the positives that only face-to-face communication can provide. Organizations are using videoconferencing and collaboration equipment for interdepartmental training, company-wide events, and distance learning, as well as meeting management and recording. The average person now has more ways to communicate with one another than ever and is getting used to having that technology available to them.”

Develop A Video Mindset

Getting started with videoconferencing technology generally isn’t a complex process, but identifying your needs can go a long way toward ensuring future success with any given platform. John Antanaitis, vice president of marketing at Polycom (www.polycom.com), notes there are several elements that enterprises should consider before moving forward with videoconferencing. For example, he recommends thinking about how video can tie into line-of-business applications such as manufacturing and research and development, which could have special considerations and customization requirements. Further, he suggests thinking about how telepresence can tie into recording, streaming, and video content management. Planning should also extend beyond company walls, Antanaitis adds,

including how enterprises want to use the technology with customers and partners. “Enterprises should think about video as a call rather than a conference,” says Dave Hart, CTO and executive vice president of Presidio (www.presidio.com). “The term ‘conference’ implies multiple parties in a conference room calling multiple parties in another. Video technology has advanced to the point where we can provide a high-quality experience in a very ubiquitous way including, and in particular, [support for] one-on-one interaction. We advise our clients to start with the premise that every interaction that does not occur in person should have a video component, regardless of the number of people involved.”

Target Your Needs

When seeking to identify the right videoconferencing product for your environment, several factors must be considered. Jason Francois, a design engineer with CCS, says an enterprise must evaluate its current needs, network infrastructure and topology, and peak bandwidth requirements for general operations. “Equipment for recording, archiving, and streaming content; bridging conferencing standards; traversing firewalls; and integrating into enterprise scheduling and email are no longer niceties but have become standard issue. Media-rich content, multipoint communication, and integration into VoIP infrastructure are the keys. The conferencing equipment that is chosen should meet not only the immediate requirements but should allow for expansion,” Francois says. Presidio’s Hart adds that a range of dependencies ultimately spawn the need to find answers to several questions. For example, how will you use video as a communication tool? What types of video communication do you envision (person-to-person, person-to-group, room-to-room, person-to-classroom, etc.)? What type of experience is required (desktop/laptop, standard-definition office, high-definition, room-based office, immersive telepresence, etc.)? What will my existing infrastructure support? Do I have the capital to upgrade that infrastructure to support my video requirements? “An enterprise has to choose between using an overlay-independent IP network for video or using their existing converged

IP WAN transporting applications and VoIP,” explains Frederic Hediard, vice president of product marketing at Streamcore (www.streamcore.com). “An independent network makes the most sense for high-end, immersive videoconferencing systems. But many enterprises choose to exchange videoconferencing traffic over their existing WAN for obvious cost savings purposes and also when videoconferencing is included in a UC [unified communications] project running UC traffic over the converged WAN.”

Roadblocks Ahead

Videoconferencing can quickly and effectively boost communication while helping cut costs on travel and other expenses, but enterprises still must be prepared to address some roadblocks when integrating and using the technology. For example, Hediard says that videoconferencing is both bandwidth- and performance-sensitive. “When deployed over a converged IP network, videoconferencing traffic is mixed with other types of network traffic and can suffer from serious performance degradation if the WAN traffic is not prioritized and controlled. Another challenge relates to desktop video. These flows must be controlled so that they do not degrade the business applications’ performance,” he says. Education—or lack thereof—is another potential roadblock to successful implementations. Belisle says that end users don’t exactly need to be certified technical experts in videoconferencing, but they should be comfortable using the equipment. He recommends that enterprises designate staff members that understand the equipment so that they can train other staff and can be available for assistance when something goes wrong. “Also, something that a lot of us don’t think about is etiquette,” Belisle adds. “While there aren’t rules as to proper etiquette for video collaboration, we must be cognizant that there are microphones on conference tables, the locations of cameras, and, most importantly, to not speak over one another. Conference participants need to know that what they say, no matter how softly, may be heard on the other end of the conference. This not only pertains to voices but rustling papers, side conversations, and general background noise.”

Watch For These Challenges

- Today’s videoconferencing market includes products and technologies for practically every enterprise need, but video communications nonetheless bring a unique set of challenges.
- John Antanaitis, vice president of marketing at Polycom, identifies several of these challenges.
- Video traffic is different.** Real-time video traffic is very different from other traffic on the network. It requires substantial bandwidth and is more susceptible to network congestion and packet loss than other types of non-real-time data traffic.
- Cultural barriers.** Using video communications dramatically changes how people collaborate across distances. Initial training can help users transition and adjust to a more collaborative environment. The good news is that users typically embrace the technology and become comfortable rather quickly.
- Interoperability.** Not all video solutions use the same technologies, which can create interoperability issues. The safest bet for customers is to look for solutions that use established videoconferencing standards.

CLOUD TIPS & TRICKS

Cloud Computing For The SMB

Top Tips For Decision-Making & Deployment

BY CYNTHIA HARVEY

IF YOUR SMALL BUSINESS is considering adopting cloud computing, you’re not alone. A recent survey of 1,000 small to mid-sized businesses by researchers at MarketBridge found that 44% of respondents had already deployed at least one cloud-based application. In addition, more than 70% of those surveyed planned to move at least one new application to the cloud within six months.

Why are smaller companies so attracted to cloud computing? In the MarketBridge study, 38% of SMBs said they were looking to the cloud to help support their growing use of mobile devices. Others cite cost savings, reliability, and ease of use as key factors in their decisions to move to the cloud.

If your small business is thinking about or planning a move toward cloud computing, experts offer a number of tips to help the transition go smoothly.

Start Small

According to Tyler Royce, senior executive officer at hosting company mindSHIFT (www.mindshift.com), “Testing and incrementally moving to the cloud seems to be the best way to go. Finding a few things you can do will help you increase your internal confidence in the cloud.” Once companies (and their employees) are familiar with

cloud computing and see the benefits it brings, they’re often more willing to expand their use of the cloud.

Where should companies start? Paul Chisholm, mindSHIFT chairman and CEO, notes, “Moving email and general services to the cloud is fairly easy.” Once companies are comfortable with cloud-based email, they can move on to more complex cloud-based applications.

Look Beyond TCO

“It’s fairly well documented that cloud computing reduces your total cost of ownership vs. on-premises options,” observes Robert Israch, director of global demand generation at NetSuite (www.netsuite.com). “However, that is an incomplete picture of how it can enable your business.” Instead, Israch advises SMBs that are considering new cloud services to look at total return on investment to get a better picture.

When deciding whether to implement or expand their use of the cloud, he recommends that SMBs also factor in “time and money spent upgrading different systems, maintaining hardware and servers, [and] integrating and patching together different business systems, and productivity benefits related to having access to real-time

reporting and dashboards and with giving your team anytime, anywhere system access.” By evaluating all of these factors, SMBs can get a better idea of the benefits offered by pilot projects and decide whether to expand cloud computing to additional departments and applications.

Manage The Cultural Adjustment

Sudden change can be scary for employees—particularly if they are being asked to give up applications they are

familiar with and try something new. According to Google’s Small Business Blog, “Internal communication about the change of service and in-house training sessions will help staff to feel more comfortable using the new technology.”

Small businesses that introduce cloud computing gradually, giving employees time to grow comfortable with new applications and listening to their feedback, find that their cloud computing deployments are more successful. ■

Top Tip: Don’t Let Security Concerns Scare You Away

In an IDC survey, companies that chose not to pursue cloud computing cited security as the top reason. However, experts say cloud computing is more secure than most people think. Tyler Royce, senior executive officer at hosted computing vendor mindSHIFT (www.mindshift.com), says that compared to a traditional small business computing environment, cloud computing “is arguably even more secure.” That’s because small companies often don’t have the same level of internal controls and security procedures that a hosting provider has, particularly if the small business has only one IT professional on staff.

“Cloud computing can be more secure than traditional IT,” agrees the Google Small Business Blog. “It’s all about economies of scale—many established cloud suppliers employ leading security experts, invest vast amounts of money into securing their applications, and develop technology beyond the means of any small business.”

PROQUESYS FLOWTRAQ

NEW PRODUCT

by Marty Sems

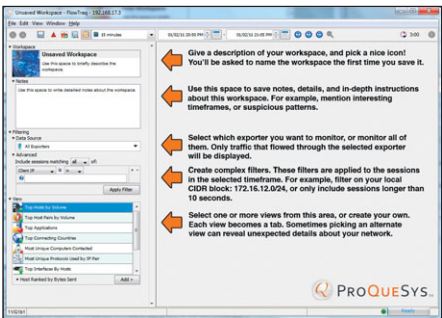
Tracking Your Network Flows Just Became Easier

PROQUESYS’ UPDATED FlowTraq network monitoring software comes with an improved help browser and better filtering capabilities in several areas of its interface, including its alerts and reports. The latter can make it easier to spot patterns in your organization’s network traffic, thus tipping you off to potential problems. The latest release also incorporates support for autonomous systems and VLANs.

“When it comes to autonomous systems, this software can really help ISPs get a handle on what traffic they are routing and save costs by making informed decisions on that,” says ProQueSys CEO Vincent Berk. “The VLAN insight can help organizations spot inefficiencies in their operations and avoid risks of information loss by detecting undesired information streams between segments of their networks,” Berk says.

A full-fidelity network flow analyzer, FlowTraq is designed to give administrators insight into network traffic and infrastructure. Multiple views of captured flows help admins uncover nodes infected by malware, illicit connections, bottlenecks, bandwidth hogs, and other problems.

FlowTraq is a key component of any company’s system forensics toolkit. Skilled at logging connections between



ProQueSys FlowTraq
Starts at \$9,600 (educational/non-profit pricing starts at \$3,995)

Network monitoring software with an updated release that adds VLAN and autonomous system support, enhanced sorting filter options, and more.

computers, data amounts exchanged, and other minutiae, the software provides information for legal discovery, time-stamped to the microsecond. And thanks to FlowTraq’s Full Fidelity Flows, there won’t be pieces missing from the puzzle.

FlowTraq supplies an accurate overview of the big picture, but it can also bring items under the microscope as needed. It can highlight and help you analyze possible leakages of sensitive business data, PCI breaches, and inadvertently incorrect settings, as well as outright attacks. And it’s customizable, so hundreds of users can maintain their own FlowTraq dashboards for optimum productivity according to their work styles.

TALARI NETWORKS MERCURY T750

NEW PRODUCT

by Joanna Clay

Premium WAN Performance Without Premium Cost

OPERATING A BUSINESS-CLASS WAN is expensive. Enterprises typically have been beholden to premium “private” connectivity from carriers (MPLS, frame relay, etc.), due to its ability to deliver high levels of performance and predictability. At the same time, they have seen “public” Internet bandwidth (DSL, cable, etc.) at a fraction of the cost, but unusable due to its inability to deliver more than two nines (99%) reliability. Now, Talari Networks’ APN (Adaptive Private Networking) technology enables enterprises to combine two or more sources of public network connectivity to create a single network path with equivalent or better performance levels than private connectivity. The result is an immediate 40% to 90% reduction in WAN costs and 30 to 100 times more bandwidth per dollar. The newest product in Talari’s lineup is the Mercury T750 appliance.

The 1U rackmount solution is targeted at midsized enterprises with up to 24 remote offices, and it can support WAN

bandwidth aggregation of up to 120 Mbps downstream and 60 Mbps upstream.

Keith Morris, Talari’s vice president of marketing, explains that the T750, which is deployed in the data center, works in concert with Talari’s T730 appliances deployed at branch office sites, Talari’s

Talari Networks Mercury T750
Combines inexpensive public bandwidth links to provide a reliable and high-performance WAN.
\$21,995



T200 appliances deployed in SOHO locations, and Talari’s T3000 appliances at larger data centers.

The T750 appliance comes equipped with autosensing 10/100/1000 and fail-to-wire Ethernet ports. Management features include a serial console port, Ethernet port, and inband. It comes with nine configurable Gigabit Ethernet ports, two bypass port pairs, and solid-state storage.

HOW TO

Prepare Data For Long-Term Archival

Get Ready For Storage

by Holly Dolezalek

• • •

IT’S TIME. The data that was once critical to your company’s mission is now passé, and it’s time to move it into lower-cost storage for long-term archival. Your mission: Get the data ready for the migration. But this is not a straightforward, IT-only project. To get your ducks in a row and your data on the right medium in the right format, check the following items off your list.

Decide What To Archive

The age of data and the infrequency of its use are two criteria that help determine whether it should be archived. But this is not a decision you make on your own. Archiving data is a group effort, because there are different stakeholders who will need to weigh in. Human resources, the legal department, and business division heads will all have necessary information, such as what the company’s retention policies are, what type of storage different kinds of data has to be stored on, and other guiding factors. “Deciding what data should be preserved, vetted, or warehoused for long-term archival or retrieval is the domain of the business unit(s) managers,” says Ron Copfer, principal of Visual Evidence (www.vevidence.com), an e-discovery company in Cleveland. “The ultimate decision on what data and how often that data might need accessing should not be the responsibility of IT.”

Involving other stakeholders prevents compliance violations, but it also brings more resources and help IT’s way as the project moves forward. It also keeps the project from failing by getting input from stakeholders as issues arise. “During the process, you will need stakeholders to be available for questions and to provide answers to important decisions, such as specific questions about which data to keep and what to destroy, and any exceptions to the rules,” says Tom McCaffrey, director of archiving for Kroll Ontrack (www.krollontrack.com).

Regulations & Industry Standards

Before preparing data for long-term storage, make sure you know what regulations or industry standards might dictate how that data has to be stored. “For example, in the communications sector, call data records are required to be retained for up to seven years,” says Deirdre Mahon, vice president of marketing for RainStor (www.rainstor.com), an online storage company in San Francisco. “In more established industries such as health care and financial services, there are a number of external compliance regulations that dictate retention laws where 20-year data retention timeframes are not unusual. Not adhering to these time-sensitive regulations can result in serious financial penalties in addition to serious headaches for the IT group.”

Other Data Considerations

Once the data marked for storage has been identified, you obviously need to know where it’s located and on what infrastructure. Whether you limit your inquiry to the data being moved or decide to map out all of your organization’s data, you’ll need to get all of its vital statistics to know how to migrate it. “The first step in the process is to develop a data map of the entire organization and understand who all the custodians are, where their data is stored, the type of data stored, and

inexpensive form of storage, but compliance requirements for some industries mandate that certain types of data be stored on more readily accessible media than tape. Again, your choice may also depend on your company’s potential exposure to litigation. “IT and data center managers must be knowledgeable about legal requirements for data preservation if a lawsuit is presented to them or if their organization intends to file one against another party,” Copfer says. “These lawsuits can include HR claims all the way to white-collar crimes such as price fixing.”

After Data Is Stored

Your job isn’t over once the data makes it to long-term storage. Both to avoid unnecessary storage costs and prevent risks associated with having data that could be used against the holder, many companies make efforts to purge data as soon as possible after any regulatory requirements for retention have been satisfied. After you’ve mapped out how long the data should stay in storage, get agreement among stakeholders about when the data should be purged.

But keep in mind that there may be exceptions. “It is important to plan for exceptions to every retention rule,” says Jonathan Langdon-Phillips, director of research and development for Westbrook Technologies (www.westbrooktech.com), a document management software company. “For example, typically an invoice is retained for seven years. However, if that invoice has never been paid or may be required as evidence for an ongoing court case, you will want a mechanism to flag that document and save it.”

Key Points

- Migrating data to long-term storage means working with multiple stakeholders, including HR, legal, business division heads, and units that access the data for reporting or other purposes.
- Regulations, industry standards, legal obligations, and other rules or processes might affect how long you need to store data and what format or media you use.
- To migrate data to long-term storage, you’ll need to know where it resides, how often it’s changed, what type of data it is, who uses it, what infrastructure it’s on, and other vital statistics.

any other pertinent information that may reside (ERP databases, CRM systems, backup data stores and their locations, etc.) within the organization,” Visual Evidence’s Copfer says.

For example, how much data is involved? How much storage will you need to archive it? What are the types of data—emails, instant messaging, documents, or other types? What is the backup schedule for this data, and what’s the rotation? How often is the data accessed, and does anyone use it for reporting or analysis? Finally, what capabilities do you need for the data once it’s in storage? For example, if data is likely to be used in a lawsuit, you may need to be able to search it, suspend scheduled destruction for certain documents, and export data for discovery and investigations.

Costs Involved

The cost of migrating data from a production environment to long-term storage depends on whether you use a third party or handle the project internally. You may need consultants to help you define your regulatory obligations or your data retention policy. Your choice of storage media will affect the cost, and so will your choices about whether to use a cloud or hosted storage provider, if either is an option. If your company is involved in a lawsuit or faces significant risks of one, a legal hold and review system may be necessary, which also increases your cost.

Although cost will figure in your choice of storage media, regulatory or industry standards will also come into play here. Tape has historically been the most

Third-Party Apps Responsible For Most Vulnerabilities

Analysts for security company Secunia say that the recent 71% upsurge in vulnerabilities in common software applications is due mostly to problems with third-party applications rather than problems with Windows or other Microsoft applications. Noting that Microsoft has long been perceived as the main security culprit, Secunia spokespersons say that this may no longer be true, largely because Microsoft uses a common updating mechanism to patch vulnerabilities in all of its products, including applications and operating systems. Other vendors all use different systems—with only a few offering auto-update options similar to that offered by Microsoft. The absence of a common update system opens vendors to cyberattacks, Secunia reports.



VMware Q4 2010 Revenue Up

VMware’s Q4 2010 revenue finished ahead of analyst expectations, totaling \$835.6 million, an increase from \$608.2 million for the same period in 2009. The increase represents a 37% rise in revenue. VMware reported a fourth-quarter operating income of \$131 million (up 84%) and non-GAAP operating income of \$248 million (up 57%). Net income for the quarter reached \$120 million (28 cents per diluted share), up from \$56 million reported in Q4 2009. Operating cash flows for the fourth quarter, meanwhile, rose 43% to \$407 million compared to the same period the year prior, while free cash flows totaled \$406 million, up 57% year over year. For all of 2010, VMware’s revenues hit \$2.9 billion, up 41% from 2009. Operating income for the year reached \$428 million, up 95% from 2009. Net income reached \$357 million vs. \$197 million for 2009. “VMware clearly benefited in the fourth quarter from both an uptick in spending and the momentum of virtualization as the central technology for modernizing infrastructures,” says VMware CEO Paul Maritz.

Email Shifting To Mobile Devices

A new survey from comScore finds that U.S. consumers are beginning to rely more on their mobile devices for email. As of November 2010, visits to Web-based email sites declined 6% compared to 2009, while 36% more users accessed email via their mobile devices. According to the research firm, the shift is largely due to easy access to on-demand communication options and the multitude of ways in which people can communicate electronically.

Most IT Workers See Modest Salary Increases In 2010

According to Dice.com, employees in the tech industry received an average 0.7% increase in salary from 2009 to 2010. Although about 50% of the workers surveyed earned raises, IT workers in Silicon Valley-based or larger companies earned slightly better increases in pay, and more than a third of Silicon Valley IT workers received a bonus last year. The average IT worker in the United States earned \$79,384 in 2010.

TOP TIPS

- Don’t forget to establish security parameters for long-term archival, including who will be allowed access to data in the archive and which data they can access.
- Email journals are one method for email preservation. “A journal is a log file of all the messages sent and received through the server, and anything sent to or by a user is recorded by the journal,” says Tom McCaffrey, director of archiving for Kroll Ontrack (www.krollontrack.com). “If users delete a file out of their inbox, it will still be accessible in the journal, and that’s the place to capture from.”
- Migrating data that is no longer needed to long-term storage can improve your server performance.
- Consider standardizing your storage infrastructure and database technology. “Streamlining infrastructure with a tiered approach is important not only because you can gain efficiencies, but also because you avoid training your IT team on multiple systems,” says Deirdre Mahon, vice president of marketing for RainStor (www.rainstor.com).



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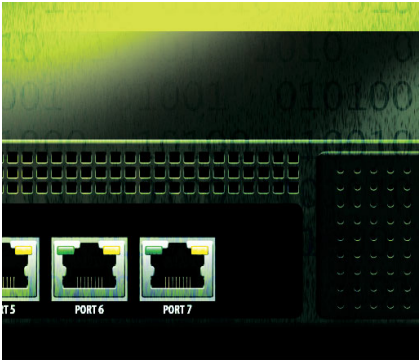
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SECURITY

BUYING GUIDE



by Marty Sems

UNIFIED THREAT MANAGEMENT incorporates a raft of network security technologies previously sold separately, such as intrusion prevention, spam filtering, and VPN. Not only does well-coded UTM keep disparate components from conflicting with each other, it gives them access to each other’s expertise for better protection.

Here’s a look at major features to keep in mind if your enterprise is planning to upgrade its UTM appliance.

Perimeter defense. If you think of a UTM as a castle, its firewall component is its moat. Pierluigi Stella, CTO of Network Box USA (www.networkboxusa.com), recommends that a UTM appliance have at least SPI (stateful packet inspection) capability. Better yet, he says, is a hybrid firewall with SPI, proxy, and packet filtering features.

Additionally, the UTM must come with intrusion detection and prevention systems (IDS/IPS). The IDS/IPS should be

BUYING TIPS:

Unified Threat Management

inline with the firewall and fully integrated with it to better stop threats at the edge.

Anti-everything. “Hackers use all kinds of ways to get in,” Stella says. “You need to have protection against all of them.” This means active safeguards against spam, phishing, Trojans, worms, and so on.

Buyers’ Checklist

☒

Effectiveness. How well does the appliance block malware and network threats, known and unknown?

☒

Performance. Is the system fast enough to have minimal impact on network throughput?

☒

Price. Beyond the purchase price and cost of initial, professional configuration, what’s the ongoing subscription cost of remote management?

☒

Reliability. If the UTM comes in an appliance, does it have high availability features?

First, Stella says, a good UTM employs multiple antivirus engines with robust, real-time protection against zero-day attacks. The antivirus should cover multiple protocols. An additional ability to scan encrypted protocols, uncommon today, will become more important this year, he adds.

Also, Stella says, look for products from vendors that don’t “dumb down” their low-end models intended for branch and remote offices. Although entry-level UTMs may provide proportionally more modest throughput and concurrent connection figures, he says, “it is very important that the technology offered for the small offices be exactly the same as that offered for the main office.”

User-related protection. A UTM must provide policy enforcement, detection of hidden and/or compressed attachments with potentially dangerous payloads, and server protection that leverages the firewall and IDS/IPS.

A Web access policy is also key, Stella says, as is secure VPN access with both IPsec and SSL support for site-to-site and roaming scenarios.

Continuous vendor support. After dedicating a skilled, onsite technician or two to professionally configure your new managed UTM to protect your network, the vendor must also monitor and manage the appliance all day, every day. This includes proactive updating instead of waiting for the devices to “check in” every so often.

“The Internet moves too fast for updates to be pulled from the

Key Terms

Appliance. A standalone server for running a particular application, such as UTM.

Managed. An appliance that a vendor remotely monitors, updates, and changes.

UTM (unified threat management). Software (often installed on a managed appliance) that seeks to comprehensively block malware and network threats through features such as a firewall, antivirus, antispam, intrusion prevention, VPN, access policy enforcement, and more.




devices. Push updates are now a must . . . to reduce exposure to zero-day threats.”

True integration. A UTM should be a team effort, Stella says. All of its formerly disparate features must be integrated with each other. As examples, Stella says that just as the firewall and IPS should work closely together, the antispam should work with the IPS to block bad payloads prior to the inbox. In a like manner, the Web access policy should consult with the antispam component to disable a harmful URL inserted in a message.

“In a true UTM device, all the functions work together as a whole, such that the final result is stronger than the sum of the parts.”

Future tech. UTMs will likely add more new technologies that have traditionally been sold separately, Stella says, citing data loss prevention and vulnerability scanning as two examples. “More and more companies are demanding to see them integrated with the gateway protection,” he says. ■

Unified Threat Management

Product	Barracuda NG Firewall	Check Point UTM-1	Check Point UTM-1 Edge N
			
Description	<p>The NG Firewall series of unified threat management devices from Barracuda Networks is composed of 11 hardware appliances for applications ranging from large facilities to small branch offices, plus a virtual appliance for VMware. The latter can be deployed in the cloud and in a hybrid mode.</p> <ul style="list-style-type: none">Supplies antispam, antivirus, Web filtering, Layer 7 application profiling, intrusion prevention, and network access controlThe Barracuda NG Control Center interface provides management of security, content, and traffic policiesFirmware release 5.0 brings support for 64-bit multi-processing and Active Recovery technology <p>Best For: Enterprises, midmarket organizations, and service providers.</p> <p>Price: \$599 to \$32,999</p>	<p>The Check Point UTM-1 family of turnkey, comprehensive security appliances has several models covering the security needs of organizations ranging from about 75 users in size to up to 1,500 employees. There's zero-hour outbreak protection on board in addition to DoS and buffer overflow attack mitigation; instant messaging and P2P firewalling; and antispam via reputation, white/blacklists, and content analysis.</p> <ul style="list-style-type: none">Firewall throughput ranges from 1.5Gbps in the UTM-1 136 to 4.5Gbps in the UTM-1 3076Features IPS, firewall, antivirus, antispymware, URL filtering, Web security, and antispam functionalityVPN throughput of up to 1.1Gbps in the UTM-1 3076Modular Software Blade architecture allows future addition of features such as SSL or IPsec VPN, VoIP, and moreSupport for up to 1.1 million concurrent sessions in the UTM-1 1076, 2076, and 3076IPS throughput of up to 4Gbps in the UTM-1 307680GB to 160GB of onboard storage capacity <p>Best For: Medium-sized to large enterprises.</p> <p>Price: Starts at \$3,500</p>	<p>The Edge N series has a very different focus than other members of Check Point's UTM-1 lineup. It's directed at SMBs and branch offices with pricing to match. Four models, including two ADSL editions, share the same performance specifications but differ in options such as Wi-Fi 802.11n, 3G modem support, Gigabit Ethernet, SFP and USB support, a print server, and more.</p> <ul style="list-style-type: none">1Gbps firewall throughput200Mbps VPN throughput60,000 concurrent firewall connections <p>Best For: Branch offices and small to medium-sized businesses.</p> <p>Price: Starts at \$950</p>

Product	Network Box M-255, M-285 & M-385	SonicWALL NSA 2400	SonicWALL NSA 4500
			
Description	<p>Network Box offers a range of UTM devices, with three aimed at medium-sized enterprises. New from Network Box is the M-385, which makes use of a 3GHz dual-core Intel Core 2 Duo processor to power its impressive security technologies. The M-285 (pictured) features a 2GHz Intel Pentium M processor. There's stateful packet inspection and packet filtering in the firewall, IDS and IDP, anti-malware, antispam/phishing, content filtering, IPsec and SSL VPN, and more.</p> <ul style="list-style-type: none">Supports up to 150 usersThe M-385 has seven Gigabit Ethernet ports (expandable to 11 and with fiber support); the M-285 has four Gigabit Ethernet ports and a 100Mbps port <p>Best For: Medium-sized enterprises.</p> <p>Contact: (832) 242-5758 www.network-box.com</p>	<p>SonicWALL says that its NSA 2400 gives small to mid-sized businesses comprehensive internal and external protection with easy, flexible setup. It boasts six Gigabit Ethernet ports plus dual USB connections for potential 3G wireless modem configuration access. The NSA 2400 is a next-generation firewall platform, the company says, bringing dual-core performance to the table along with advanced protection technologies.</p> <ul style="list-style-type: none">Application Intelligence and Control addresses leakage of sensitive dataGranular control over basic policies and rulesReassembly-Free Deep Packet Inspection uncovers hidden threatsGateway antivirus, antispymware, and intrusion prevention <p>Best For: Branch offices and small to medium-sized businesses.</p>	<p>SonicWALL bills its NSA 4500 as a next-generation firewall platform for central-site and large distributed environments needing high capacity and performance. The NSA 4500 includes dual-core processing, IPS, SSL VPN, high-availability technology, advanced networking, and proprietary features in an effort to provide real-time protection without sacrificing speed. SonicWALL says that the NSA 4500 supports a large but flexible deployment with 1,500 site-to-site VPN tunnels, 500 global VPN clients (3,000 maximum), two SSL VPN NetExtender clients (30 maximum), and two Virtual Assist Technicians (10 maximum).</p> <ul style="list-style-type: none">Reassembly-Free Deep Packet Inspection firewallSonicWALL Clean VPN secures tunnel access and trafficApplication Intelligence and Control prevents data leakage <p>Best For: Midsized businesses; central-site and large distributed environments.</p>

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Marty Sems

Crossbeam Systems X-Series



The X-Series Network Security Platform family from Crossbeam brings together a quartet of security appliances for a range of needs. The X20, X30, X60, and X80-S are based upon a blade-style, modular architecture—what Crossbeam calls an open, adaptable platform—for expandability. Each encloses at least one APM (application processor module), an NPM (network processor module), and a CPM (control processor module), along with Crossbeam’s latest XOS operating system.

- Models support throughput of 5Gbps in the X20 to 150Gbps in the X80-S
- APM blades are available with up to 12 cores
- The updated XOS operating system version 9.5 supports more security applications

Best For: Service providers, telcos, and large enterprises.

Price: Starts at \$50,000 for the X20

Fortinet FortiGate-3040B



High-bandwidth networks require high-bandwidth security. The FortiGate-3040B from Fortinet is up to the challenge. Sporting the highest 10Gb port density in its class, according to Fortinet, the FortiGate-3040B provides subscription-based, real-time security coverage. And with its purpose-built FortiASIC processors, it doesn’t bog down the network.

- Hardware-accelerated 10Gbps Ethernet SFP+ and 1Gbps SFP ports
- 40Gbps firewall and 16Gbps IPsec VPN throughput
- Can support up to 4 million concurrent sessions and 100,000 new sessions per second
- 1.2Gbps antivirus and 5Gbps IPS throughput
- Redundant, hot-swappable power supplies

Best For: Large enterprises.

Price: Starts at \$39,995

Juniper SRX Series Services Gateways For The Branch



Juniper says its SRX Series Services Gateways For The Branch UTMs are the only solutions that consolidate switching, routing, and security services in a single device to connect, secure, and manage any network. With five models for branch offices (and another five for the data center), the SRX series aims to deliver proven security services combined with superior availability and performance, while reducing total cost of ownership.

- Firewall, VPN, IPS, antivirus, antispam, Web filtering, and content filtering
- Wizards for quick and easy deployment
- AppSecure application-level monitoring and firewall
- Integrated and centralized reporting, configuration, policy management
- Integrated WAN/routing/QoS with Ethernet, 3G, LTE, T1/E1, xDSL, serial, and DOCSIS-3 options

Best For: Branch offices and small to medium-sized businesses.

Price: Starts at \$699

Trustwave Unified Threat Management



Trustwave says that its Unified Threat Management delivers a combination of critical security technologies in a single, cost-effective package. With two tiered models to fit a variety of perimeter security needs, Trustwave UTM is available as an appliance or as a fully managed service. Fully configured with antivirus, VPN, intrusion prevention, and a firewall, the appliances can furnish a total throughput of between 4Mbps (TS-10) and 124Mbps (TS-100).

- Stateful firewall
- Inline IPS
- Web and email gateway antivirus
- Web content filtering
- Site-to-site and remote user VPN
- Remote application access control

Best For: Small, medium-sized, and distributed enterprises.

WatchGuard XTM 5 Series



A suite of management tools and enough speed to handle high-speed LAN backbone infrastructures and 1Gbps WAN connections mark the WatchGuard XTM 5 series of UTMs for midrange enterprises and SMBs. IT management access is provided by a centralized console, a CLI with script support, and a browser interface. The scalable XTM 5 series also comes with enhanced reporting skills and real-time monitoring provisions.

- Throughput up to 2.3Gbps firewall, 800Mbps XTM, and 750Mbps VPN in the XTM 530
- Up to 350,000 concurrent connections in the XTM 530
- 2,500 local user database
- Up to 600 branch office and 1,000 mobile VPN tunnels in the XTM 530
- Seven interface ports (six GbE and one FE)

Best For: Small to medium-sized businesses.

Price: Starts at \$1,590 with one-year security bundle

WatchGuard XTM 8 Series



The WatchGuard XTM 8 family of three UTM devices addresses the myriad security needs of main offices, headquarters, and other major facilities. The XTM 8 products supply full HTTPS inspection, IPS, antispam, and antivirus, plus optional features such as URL filtering, app control, reputation-enabled defense, and more. Administrators have access to the XTM 8 via scriptable command line, Web console, and WatchGuard System Manager. The system also provides rich reporting, real-time monitoring, clustering, and high availability (active/active and active/passive) features.

- Throughput up to 5Gbps firewall, 1.6Gbps XTM, and 1.7Gbps VPN in the XTM 830
- Up to 1 million concurrent connections in the XTM 830
- Up to 6,000 branch office VPN tunnels in the XTM 830
- 10 1Gbps Ethernet interface ports (four fiber ports optional)

Best For: Main offices/headquarters, medium-sized to large enterprises, and data centers.

Price: Starts at \$7,200 with one-year security bundle

Scientists Create 1,000-Core Processor

Researchers at the University of Glasgow in Scotland, working with colleagues at the University of Massachusetts Lowell, have built a 1,000-core processor they say is more than 20 times faster than chips found in today's high-end desktop computers.

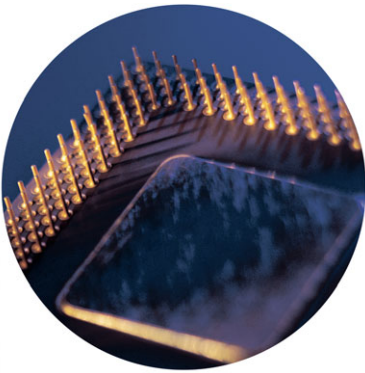
The research team, led by Dr. Wim Vanderbauwhede of the University of Glasgow, used a chip called a Field Programmable Gate Array, which lets users configure the chip's transistors into specific circuits that can each perform different tasks. The researchers configured 1,000 of these circuits on the chip, effectively creating a 1,000-core processor. Because each core can work on its own set of instructions, the chip has extremely fast processing speeds. In one test, the chip processed an algorithm in the MPEG movie format at 5GBps, or about 20 times faster than a high-end desktop computer.

Vanderbauwhede says FPGA chips like this have many different applications, including scientific computing, financial analysis, data mining, and spam filtering. FPGAs are also much more energy-efficient than traditional processors because they operate at lower clock speeds and therefore use less power, he says.

"The work we did uses an FPGA running at 100MHz, as opposed to a 2GHz CPU, so the power consumption is about 20 times less," he says. "On top of that, for many applications the FPGA will be many times faster than the CPU, which means that the energy efficiency can be in the order of a hundred times."

The Future Of FPGAs

Vanderbauwhede says that Intel and ARM have announced platforms using FPGA chips, and he expects to see wider adoption of this technology in the next five to 10 years. One drawback to FPGAs, however, is that they are difficult to program. Vanderbauwhede says that one reason for this is that "the human mind has some difficulty in dealing with parallel processes," something that can be helped with training.



"The other problem is that programming languages for FPGAs are quite different from mainstream programming languages; in particular, they are a lot more restrictive in what the programmer can and can't do," he says. "Our work aims to eliminate those restrictions."

Another drawback to FPGA chips is that software programmers are struggling to write programs that can take advantage of large numbers of cores.

"This is partly because they are used to a single-core programming model, so proper training could help, and partly because most programming languages were not designed for systems with large numbers of cores," Vanderbauwhede says. "What we need is basically better ways of dealing with parallelism, either new languages or new features in existing languages."

by Kyle Harpster

HOW TO Implement Security On A Budget

Consider Low-Cost Or Free Solutions That Are Still Effective

by Holly Dolezalek

SECURITY INVESTMENTS don't typically generate new revenue, which means they're never as popular as a new sales application. And no matter what you spend, every defense is only 100% effective until a careless employee accidentally undermines it or a hacker breaks through it. So no company ever really has enough money for security, but some companies have less than others. How do you keep your organization secure when your budget is tight?

Start with the security measures that don't cost much of anything. There are policies and procedures that stiffen an organization's resistance to outside attacks, and having them costs almost nothing. For example, Jim Lippie, presi-

dent of Thrive Networks (www.thrive-networks.com), recommends following industry best practices for password policies. "They should be at least eight characters with one special character and one number, and they should be changed every 90 days," he says.

The Right Stuff

Someone breaks one of the policies, take it seriously," Storms says. "If you don't use your security policies, they aren't going to improve your security."

Policies and practices don't cut it when hackers are determined to get past your safeguards, and that means more active defenses. But how do you choose among them?

Some security options aren't options at all. Endpoint security is obviously the first line of defense, and no company should be without that or antivirus/antispysware protection. A firewall is also a no-brainer. Backup software and encryption protect your data if your network is compromised. Beyond some of the obvious options, making budget decisions about what more to do should start with where your company's greatest vulnerabilities are. Companies with compliance burdens, such as HIPAA or FERPA (Family Educational Rights and Privacy Act), or that comply with industry-mandated standards such as PCI DSS, should consider those datasets as part of their greatest vulnerabilities, and use most of their security dollars to reduce risk in those areas.

In fact, by isolating at-risk data to certain portions of the network, you can drive down your costs. "Store business-critical information on as few systems as possible and invest most of your security resources in protecting those systems," Storms says.

Outside The House

There are other options for security that may save money, with the caveat that you never get something for nothing. You may want to consider sharing your security burden, either by taking advantage of a security solution hosted by a third party or by contracting with an MSSP (managed security service provider). Martha Vazquez, research analyst for Frost & Sullivan, notes that some organizations may find that they can afford a higher level of security with an MSSP, although using an MSSP requires granting access to company data to a third party, which may be problematic from a compliance or PR standpoint.

"The time and hours spent on security management can be pushed onto an MSSP partner, saving time and training costs for hiring or training new employees dedicated to security," she says.

Other security vendors offer hosted or on-demand security services for small businesses, and these options may be more economical than vendors that only offer onsite solutions. Co-sourcing security, with some on-premises and some hosted, may also be an option.

"Some companies are wary of an outside party having control over their data," Vazquez says. "A co-sourcing arrangement may satisfy some requirements and let the client company have some control, as opposed to other arrangements where they have no control."

TOP TIPS

Don't think you're safe because you're small. Tom Kelchner, research center manager for GFI Software (www.gfi.com), notes that this is especially important because small and medium-sized businesses are being targeted lately in a way that relies on employees who are lax or uninformed about security. "It is vital to teach those with Web-based bank account access to recognize the spear phishing emails that can drop backdoors on their machines," he says. "There are criminal organizations that specialize in snatching bank login information and transferring organizations' bank balances to money mules for transfer out of country. Small and medium-sized businesses have been targeted for about the last year probably because they have less security than larger organizations, and losses have been in the hundreds of millions of dollars."

Think of employee training as a break for your IT staff. "Educating employees about what they are doing and why it is dangerous is a more effective strategy than expecting your IT security staff to constantly react to end users' bad decisions," says Vik Ahuja of Vatech-IT (www.vatech-it.com).

A hardware-agnostic solution may save you money. Consider your current and future infrastructure and equipment when adding any kind of security system. Are you on 32-bit or 64-bit computers and servers, or a little of both? Do you have employees running XP, Vista, and Windows 7 operating systems? "IT managers can extend the life of all of these different technologies by using universal VPN solutions to connect employees to the network," says H. Peter Felgentreff, president and CEO of NCP engineering (www.ncp-e.com). "This can prevent businesses from having to update their existing equipment, and from struggling to integrate it into the established IT network."

Make your case in terms they understand. Sometimes, the budget really doesn't have enough to protect what you've been asked to, and you'll have to make a business case for what you think is essential. This means you'll have to talk in management and finance language. "Security breaches can damage a company's reputation, and that in turn can affect revenues," says Larry Gordon, Ernst & Young Alumni Professor of Managerial Accounting and Information Assurance at the Robert H. Smith School of Business at the University of Maryland in College Park, Md. "When you invest in security, the biggest benefit is that you save the potential costs associated with security breaches," which he says might include legal liabilities and stock prices. "These are implicit costs and are harder to measure than explicit costs, but you have to talk in these terms to make the business case for investing in security."

FEATURED COMPANY

A Scout On The Lookout

ForeScout's CounterACT Keeps Intruders Out Of Your Network

by Robyn Weisman

WHEN CUPERTINO, CALIF.,-BASED security solutions provider ForeScout was founded in 2000, worms and other malware had struck terror in the hearts of IT admins everywhere. The company started by offering intrusion prevention solutions and then branched out with its first NAC (network access control) appliance three years later. The latest iteration of its NAC, ForeScout CounterACT, goes beyond general NAC capabilities to provide users with intrusion prevention, endpoint compliance enforcement, and more in an easy-to-use agentless appliance.

"It contains a lot of functionality in one integrated device that can solve lots of problems all in one simple installation, including built-in zero-day protection against new worms like Conficker, Zeus, and Stuxnet, no matter how many endpoints you have," says Jack Marsal, director of marketing at ForeScout (www.fore-scout.com).

Getting An ActiveResponse

CounterACT's patented ActiveResponse technology gives data centers a 100% capture rate for viruses and other malware. According to Marsal, most NAC products and IPSes require constant updating and monitoring to work properly. "Traditional NAC products work with signatures to see if a type of traffic looks like an attack, but the problem with signatures is that legitimate traffic too often gets blocked, which is a big headache," Marsal says.

In contrast, ForeScout ActiveResponse works by beating the bad guys, be they human or automated, at their own game. "Almost all attacks have three phases. The first phase involves reconnaissance, scanning a network for vulnerability like an unattached server. Phase two is choosing the appropriate tool to exploit that vulnerability, and then phase three is launching an attack against that vulnerability and infecting the network," Marsal explains.

"ActiveResponse watches for the reconnaissance and replies to it with special counterfeit information," he continues. "If it then sees a second level of traffic that includes that counterfeit information, it can determine that it is an attack with 100% certainty. That's how ActiveResponse can stop these attacks without blocking legitimate traffic. It doesn't need constant updating, either. You can set it and forget it."

Plays Well With Others

CounterACT does not require any infrastructure changes or costly equipment upgrades in order to use it, Marsal says. "It seamlessly integrates with any network environment and works with all of your existing endpoints, managed or unmanaged, without any software having to be installed on those endpoints," he says. "And because CounterACT is deployed

out-of-band, you eliminate latency and point-of-failure issues that are common with other vendors' approaches."

According to Marsal, CounterACT works well in Cisco networks, which is a good thing because most of ForeScout's customers have them. "We are often called in when a customer decides he wants a

person at the wrong time off your network because their laptop is missing a patch."

You Control The Network Access

CounterACT provides you with the automation capabilities and granular settings to control access to your network. "What if you want to allow visitors to use your network solely to access the Internet? If your NAC isn't automated, you either are faced with leaving all the network ports in a conference room open, which poses security problems, or closing all the ports, which then requires manual intervention from IT—and then you're still not sure whether it's secure," Marsal says. "CounterACT enforces whatever policies you want so that you can provide a preauthorized code to contractors or visitors so that they can gain Internet access without granting network access."

CounterACT's automation also aids enterprises in handling compliance

audits. "Instead of these periodic efforts, CounterACT automates the audit process and can tell you in real time the equipment on the network and what their level of compliance is, which is one reason why it is popular with government and military organizations," Marsal says.

FORESCOUT COUNTERACT

(866) 377-8771
www.forescout.com

Description: An integrated NAC and intrusion prevention appliance that provides users with zero-day protection against malware and broad visibility throughout a data center network.

Interesting Fact: "The name 'ForeScout' comes from the concept that you're constantly looking to find out what is on the network and to do it before something bad happens, because you can't secure what you don't know about," explains Jack Marsal, ForeScout's director of marketing.



NAC product but decides Cisco is too complex," Marsal says. "Its ease of use and visibility, among other features, make CounterACT easy to manage even if it is in a remote office or even overseas."

In addition to its ActiveResponse technology, CounterACT's advanced visibility into data center networks makes it a great choice for SMEs. "It immediately sees a new device added to the network and can give you a complete profile on it, [including] the type of device, the identity of the person logged into the device, the operating system, and applications running on it. It can even tell you that it's located on the third floor, in building 10, or wherever else it may be," Marsal says.

A Gentler, More Helpful NAC

The CounterACT appliance uses automation both to alert you to problems and, in many cases, to take care of them without a human having to step in. For example, not only will CounterACT tell you whether a device is in compliance, it can automatically remediate it in many cases. "If CounterACT detects, say, a Windows computer on the network, and it has a vulnerability, it will trigger the PC to download the latest operating system patches or application updates and apply them," Marsal says. "ForeScout has taken a leadership role in building in



more gentle and helpful automation to keep computers on your networks while taking care of security problems without you having to intervene."

These levels of remediation also mean that you don't have to worry about CounterACT kicking devices off networks. "This has been one of the distasteful aspects of network access control that frankly has given it a bad name," Marsal says. "Most IT managers want to avoid that because it's bad for your career if you kick the wrong

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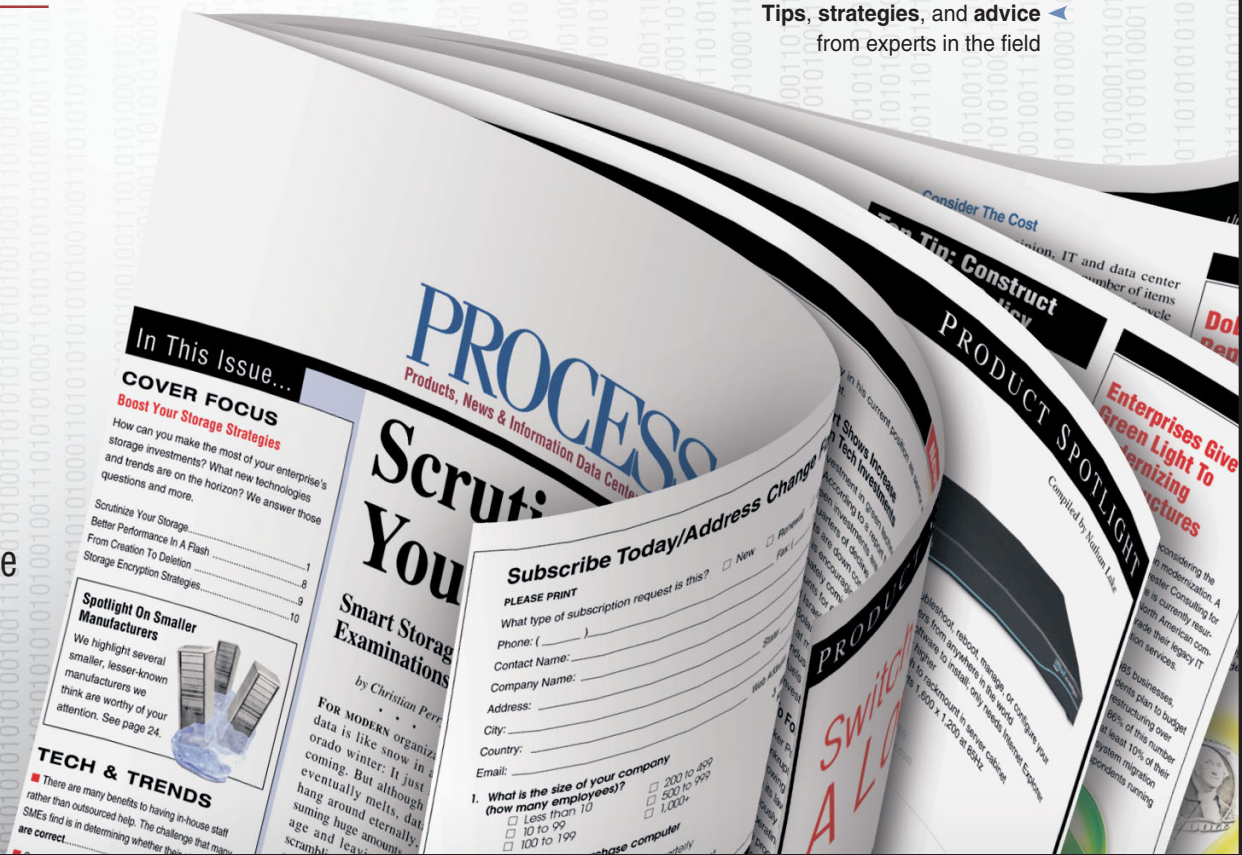
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FEATURED COMPANY

On The Leading Edge Of Chassis Design

Chenbro’s Focus On Flexibility, Availability & Scalability Ensures You Get The Best

by Nathan Lake

• • •

CHENBRO HAS BEEN DEVELOPING innovative enclosures for about 30 years. In 1986, Chenbro was the first to create a tower PC, and in 1993, it was the first to manufacture a case with a removable motherboard tray.

Research and development is the driving force behind Chenbro, and its clients include system integrators, OEM partners, and channel partners. Chenbro is a global company, with its headquarters in Taiwan and Taipei and subsidiaries in the United States, the Netherlands, UK, and Beijing. Chenbro has more than 1,400 employees, including 110 engineers that function as the company’s elite research and development team.

The Vision

The devoted research and development team works hard to make ingenuity its top priority to provide you with technological breakthroughs. Just a few of the other highlights in Chenbro’s history

and a reliability lab, you can be assured that tooling and manufacturing will leave no stone unturned.

The end result is that Chenbro blends mechanical and electronic aspects into a single, modular product that’s designed to withstand shock, avoid heat problems, and run quiet.

A Look At Chenbro’s R&D & Manufacturing Capabilities

The product development process at Chenbro goes all the way from product drawing to spec phase-in.

The product drawing stage encompasses a drawing review, prototyping, sample evaluation, and drawing freezing. Once a design is accepted, Chenbro moves on to tooling implementation and validation to ultimately create an approved sample. Chenbro’s design facilities include a rapid prototyping system that can quickly create limited production runs for form, fit, and function testing, which will enhance the efficiency and accuracy of the final design.

Chenbro even runs drop and impact tests on products to make sure they can withstand accidents and remain sturdy during shipping. The high quality of workmanship ensures that the resulting product will not easily break down under normal wear and tear.

Manufacturing In Three Locations

Chenbro has manufacturing factories in three locations: Kun Shan, Tang Xia, and Tao Yuan. The three factories feature special production lines for each of Chenbro’s product lines. For example, the Tang Xia factory includes facilities for stamping and injection, sheet metal and plastic painting or printing, and prototyping and soft tooling. The factories give Chenbro the ability to churn out thousands of products a month. Chenbro’s quality management system has been ISO 9001-certified, and the company’s safety management environment has been certified to the ISO 14001 standard.

Chenbro’s factories hold the precut raw materials for the products, and all the work is performed under the watchful eyes of Chenbro employees. For instance, the metal goes into a stamping production line where it’s inspected and checked for quality assurance. From there, the metal runs through a state-of-the-art laser cutter and numerical-controlled machine tool. Then, it’s bent to the fine and complex shape necessary for the enclosure. The metal pieces are fixed together by workers that hand rivet, spot weld, and projection weld the product. Workers then paint the cases, and they are baked to dry and harden the finish, which is then tested for quality. The plastics go through a similar process, and the combined pieces are put together in the final assembly process with a quality assurance check at each section of the assembly line.

Custom Work

Chenbro’s Custom Solution team can work with you to create a tailor-made enclosure to suit your needs, such as for the security, network, kiosk, healthcare,

CHENBRO

(909) 947-3200
www.chenbro.com

- Chenbro has a Custom Solution team that can work with you on specialized needs.
- Research and development is the key to innovation in Chenbro's products.
- Chenbro's three overseas factories work closely together to provide value added services and products.



data center, or military industries. Chenbro’s team offers design capabilities with both mechanical and electrical integration for the optimal chassis. The team provides service from concept to solution, and Chenbro will test all electronic and mechanical parts before the shipment. The design team will create the product in Pro-E 4.0, and you should have a mechanical drawing design within three to seven days. From there, Chenbro will provide a price evaluation and can move onto sample production, which should take between seven and 14 days. After a sample production is finished, you can evaluate the sample and Chenbro can finalize the configuration for mass production. The last step may take anywhere from 14 to 21 days.

That quick turnaround time means you won’t be waiting around for months to receive your custom-built cases. Chenbro focuses on NCT business, but it also works with ODMs and OEMs. Chenbro has experience working with clients to design solutions for networking, military, supercomputing, video streaming, and telecommunications applications, among others. The Custom Solution group has its own project management and engineer resources, so you can be sure that your custom work receives the full extent of Chenbro’s expertise.

Chenbro’s Custom Solution team can work with you to create a tailor-made enclosure to suit your needs, such as for the security, network, kiosk, healthcare, data center, or military industries.

include the first server case in 1988 and the first desktop/tower convertible case in 1995. All the while, Chenbro has been advancing its facilities to increase their flexibility, availability, and scalability. For example, in 1986, Chenbro established its first assembly line in Chung Ho, and now there are several assembly lines throughout the various Chenbro facilities.

The Chenbro culture is equal parts service, research and development, and flexibility. Core competence with mass production combines the partnerships with today’s top industrial partners, including Intel, AMD, Asus, Tyan, Delta, FSP, and Sanyo, with co-design and product development to create partnerships that ensure a top-notch chassis.

The company’s flexibility is found within the modularization and seamless assembly goals. For instance, Chenbro development and design teams come up with definition and specs of a product, where it’s sent to product design for prototyping, testing, and manufacturing. And with design facilities that feature rapid prototyping, an EMI lab, a thermal lab,

Chenbro has a thermal lab where it can perform a ventilation performance test and help ensure the stability of the whole system. All of the thermal test methods are duplicated from Intel. There’s an EMI lab that’s completely sealed to frequency test products from 1.5 to 5GHz so the unit will comply with UL, CE, and FCC standards.

A Quick Look At Chenbro’s Products

Chenbro makes chassis for PCs, servers/workstations, rackmount systems, storage family kits, and card kits. Rackmount chassis are available in 1U, 2U, 3U, 4U, 5U, and 9U options. True to Chenbro’s technological innovation history, you’ll find a variety of handy features that make it easier to maintain and access servers. For example, many products feature a modular HDD cage that simplifies fabrication and makes for more economic inventory management. Some models also feature a front- and

rear-accessible design for flexible HDD capacity expansion. You’ll find front LED displays with power, reset, and mute switches on the handle of many rackmount chassis.

One of the newest innovations from Chenbro is the RM31508, which is the first concept implementation of a modular server, featuring a modular HDD cage, hot swap fan modules, and modular Mini-SAS B/P. The modular components in the 3U chassis make for easy motherboard installation

and quick maintenance, while giving you online service capabilities. USB and VGA ports are included for field monitoring and control, and there are two slots for 3.5-inch internal hard drives to let you create a mirror RAID. Chenbro plans to release a variety of modular servers during the next year that will give you even greater control over server configuration and provide logistical cost savings.


Chenbro has also recently released chassis options for

surveillance, broadcast storage, and industrial situations. There’s a storage family of products that includes 2.5-inch drive solutions, 3.5-inch drive solutions, and 5.25-inch bay converters, as well as SAS expander cards and backplanes. A typical SAS expander card fits into a standard rear window chassis or low-profile rear window chassis. You can even set up a SAS expander to a JBOD cascade by combining a JBOD server with an expander board and a UEK (universal expander kit).

Data Center/IT Training

Training Center

Global Knowledge


Global Knowledge


Description

Global Knowledge is the worldwide leader in IT and business skills training. The company delivers courses via training centers, private facilities, and the Internet, letting customers choose when, where, and how they want to receive training programs and learning services. Global Knowledge specializes in high-quality, hands-on data center training courses that are delivered by accomplished cross-domain experts. Instructors are certified Cisco Systems and VMware Certified instructors with real-world experience. The company's broad-based data center curriculum includes VMware, Cisco, Sun, IBM, Red Hat, and Microsoft courses as well as other subjects.

- Learn from experienced instructors and award-winning curriculum
- Engage with custom hands-on labs and exercises
- Choose from robust delivery options
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- Select from more than 1,200 courses

Best For: IT training for the individual or for the enterprise organization that requires skills development or certification.

NetCom Information Technology


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NetCom Information Technology, headquartered in New York, has training centers located in 18 states across the country and offers training solutions for more than 1,000 technical, application, and project management courses to Fortune 500 companies, businesses, government agencies, and individuals. NetCom's subject matter experts provide authorized hands-on education in the latest technologies from leading vendors, including (ISC)2, Adobe, Autodesk, Check Point, Cisco, Citrix, CIW, CompTIA, EC-Council, Microsoft, Novell, Oracle, PMI, and others. NetCom is an authorized testing center for Sylvan Prometric, VUE, and Certiport. The company is also a New York and New Jersey Workforce Training Provider and a licensed school registered with the New York State Education Department.

- Provides world-class training and certification preparation for the most in-demand computer technologies
- Offers authorized career training classes in Microsoft, Cisco, Adobe, PMI, Autodesk, Oracle, Novell, CompTIA, and more
- All courses and boot camps are hands-on, led by certified instructors using the latest equipment
- On average, NetCom instructors have 11 or more years of experience in the subjects they teach
- Curriculum options aimed at helping students become Web site developers, database administrators, computer programmers, graphic designers, security specialists, and project managers
- In the last decade, NetCom has delivered training to thousands of individuals and corporations

Best For: IT, security, and project management training for beginners and also for experienced staff looking to enhance their careers or enter a new market.

Training Center

TechSkills




Description

TechSkills is a nationally recognized leader in education delivery, specializing in skills and certification training for careers in information technology, healthcare services, and business. TechSkills' teaching methodology combines elements of traditional instructor-led education, the latest online learning tools, and extensive hands-on skill-building to create an effective and efficient learning process. Students control what they learn, when they learn, how they learn, and how rapidly they progress. Based in Austin, Texas, TechSkills operates more than 25 campuses in 16 states. TechSkills campuses are licensed in each state in which they operate, and select TechSkills campuses are nationally accredited by the Accrediting Council for Continuing Education & Training.

- Offers personalized programs that include morning, afternoon, evening, and weekend classes; online and on-campus study options; intensive small group "microlab" training sessions; and the latest online learning tools
- Course customization lets you skip what you already know and progress at your optimal speed
- Hundreds of hands-on lab activities to provide real-world experience
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- Multiple programs, including Microsoft, Cisco, Oracle, and IT security certification

Best For: Students seeking certification in IT, technical, or business areas.

United Training



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DATA CENTER MANAGEMENT

Compiled by Rod Scher

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DTSEARCH ENGINE

NEW PRODUCT

by Nathan Lake

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DTSEARCH HAS ABOUT **20 YEARS** of experience in searching data and file format parsing and conversion. The newest version of the dtSearch Engine (7.66) includes several features that enhance the dtSearch Engine’s developer’s API. For example, dtSearch Engine 7.66 offers native .NET 4.0 APIs and sample code, as well as MS Azure deployment instructions and sample code. In addition to native 64-bit Visual Studio support, you’ll find plenty of other performance enhancements for faceted search and other hierarchical sorting in cases with millions of document metadata tags or database records.

The dtSearch Engine supports a variety of Internet, intranet, and commercial applications through dtSearch Engine for Win & .NET and dtSearch Engine for Linux. Both 32-bit and 64-bit versions are available as well as .NET, Java, and C++ APIs. All dtSearch products can index more than a terabyte of text into a single index. And you can create and simultaneously search an unlimited number of indexes. The software’s built-in file parsers and converters can work with a range of popular file types, including MS Office documents and existing Web-ready content from HTML, PDF, and XML/XSL.



dtSearch Engine 7.66

The newest version of the dtSearch Engine works with native .NET 4.0 APIs and includes faceted search and other performance enhancements.

dtSearch’s product line can index and search email messages and attachments across Exchange, Outlook, and Thunderbird. For database queries, the dtSearch Engine’s APIs are capable of indexing SQL-type databases with BLOB data. The .NET Spider API provides you with local or remote Web site content as a searchable data collection. Searches can span any level of depth and across any number of Web sites. The dtSearch Engine supports more than 25 full-text and fielded data search options, including advanced federated search and forensics features.



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GIADA MI-R880G MOTHERBOARD & ITX-400B CHASSIS

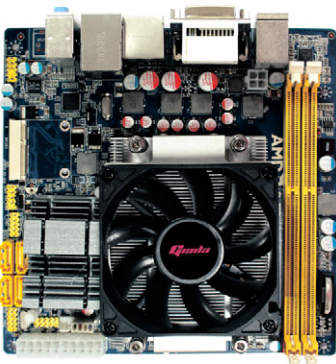
NEW PRODUCT

by Nathan Lake

A Mini-ITX Powerhouse

IF YOU’RE LOOKING TO BUILD a light-weight, affordable desktop system for work, the Giada MI-R880G mini-ITX motherboard is a great start to your build. The MI-R880G is compatible with today’s AM3 processors, and its 880G chipset includes ATI Radeon HD4250 integrated graphics with support for HD resolutions. With HDMI and DVI outputs, the MI-R880G can handle dual monitor setups, and it also features four 6Gbps SATA ports that support RAID 0, 1, 5, and 1+0 configurations.

There are two DDR3 memory slots that can handle up to 4GB of 1333MHz memory. A Mini PCI-E 2.0 slot is available to let you install an expansion card such as 802.11n Wi-Fi. You’ll find six USB 2.0 ports, one eSATA port, one SPDIF output (supports surround sound), a set of analog audio jacks, and a Gigabit Ethernet port. For internal connectors, there’s support for two USB ports, four 6Gbps SATA devices, and front panel audio. The dense amount of internal and external connectors on the Mini ITX board means that you’ll have enough flexibility to connect the variety of peripherals you need for your job.



Giada MI-R880G Motherboard & ITX-400B Chassis

The MI-R880G is a mini-ITX motherboard that supports AM3 processors and up to 4GB of DDR3-1333MHz memory. Pair it with the lightweight ITX-400B chassis.

To create a system that maximizes desk space, you can pair the Giada MI-R880G mini-ITX motherboard with the OEM ITX-400B aluminum chassis that offers a VESA mount so you can attach it to the back of an LCD monitor. There are also other OEM ITX aluminum chassis, including models with slim CD bays, 5.25-inch optical drive bays, small LCD displays, and more, available for the MI-R880 and other ITX motherboards.



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AMD Profits In Fourth Quarter

AMD announced its fourth quarter financial results. Revenue was \$1.65 billion, with a net income of \$375 million (50 cents per share) and an operating income of \$413 billion. Its non-GAAP net income was \$106 million (14 cents per share) with an operating income of \$141 million. Much of the financial boost stemmed from a patent license and the settlement of a legal dispute. For the entire year, profits outpaced 2009's financial results. Total revenue was up to \$6.49 billion from \$5.4 billion in 2009; operating income rose to \$848 million, compared to \$664 million in 2009; and net income came in at \$471 million (64 cents per share) compared to \$304 million (45 cents per share) in 2009.

Four HP Board Members Step Down

Four members of HP's board of directors—Joel Hyatt, John Joyce, Robert Ryan, and Lucille Salhany—are stepping down from their positions. In their place, five new members will serve on the board to bring its number to 13. The new directors include Shumeet Banerji, Gary Reiner, Patricia Russo, Dominique Senequier, and Meg Whitman; they will stand for re-election at the annual meeting of stockholders in March. The following current board directors will hold their positions pending re-election: Raymond Lane, Marc Andreessen, Léo Apotheker, Lawrence Babbio Jr., Sari Baldauf, Rajiv Gupta, John Hammergren, and G. Kennedy Thompson.

Yahoo! Results Exceed Expectations

Financial analysts predicted that Yahoo! would pull in \$1.19 billion in net revenue for the fourth quarter of 2010, and Yahoo! just beat those estimates, taking in \$1.2 billion. Although this marks a 4% decrease compared to a year ago, net earnings increased to \$312 million, compared to the \$153 million in the same quarter the previous year. GAAP search revenue topped out at \$640 million; cash flow from operating activities increased by 15% to \$403 million. In business achievements, Yahoo! added Twitter integration to accounts, launched the new Yahoo! Messenger Beta, announced the Local Offers program with deal providers, and transitioned to Microsoft's search advertising platform.



Bing Continues To Gain Search Market Share

In comScore's most recent monthly qSearch analysis detailing the U.S. search market, Google held a 66.6% share in December, up 0.4 points from November. Yahoo! search sites followed with a 16.4% share, which marked a 0.4% dip from the previous month. Microsoft sites, including the Bing search engine, were up 0.2 points to grab an 11.8% stake of the U.S. market. The Ask Network grabbed a 3.5% share (down 0.1%), while AOL held a 2% market share, down 0.1 points. ComScore reports that there were more than 16.4 billion explicit core searches conducted during the month, with Google accounting for about 11 billion of them. Americans overall conducted 18.2 billion total core search queries in December 2010, comScore reports.

Energy-Efficient Best Practices

Strategies To Streamline Power Consumption

by Elizabeth Millard

. . .

IN A RECENT CDW STUDY, two-thirds of respondents noted that understanding best practices in energy-efficient IT is critical to their profession, because it offers a path to improved computing performance in power-constrained environments. Numerous factors and strategies are involved in creating more efficiency, but experts believe that even little tweaks can make a big difference on overall consumption and operation. Here are some best practices to consider for your SME.

Facilities Issues

According to Jon-Louis Heimerl, director of strategic security at Solutionary (www.solutionary.com), proper sizing is key in creating energy efficiency. He says, "If you need a data center of 2,000 square feet, don't use 50,000 square feet and apply environmental conditioning like temperature and humidity to control the entire space."

Some SMEs have larger data centers than they need currently, in anticipation of scaling up in the future. If this is the

Purchase Efficient Storage Systems

Because storage is so vital to an organization, developing an efficient storage strategy can be crucial to energy efficiency, notes Thomas Isakovich, CEO of Nimbus Data Systems (www.nimbusdata.com). He points out that efficient storage systems include both software and hardware and can include unified storage, thin provisioning, and primary storage deduplication.

"[These] enable companies to maximize the utilization of the storage they purchase," he says. "Also, hardware must be efficient, and moving to solid state is an essential improvement since it delivers comparable capacity at 90% lower power consumption, while also providing up to 30 times the performance improvement."

Implement Row-Based Cooling & Consolidate UPS Units

Putting row-based cooling solutions near densely populated racks is a strong efficiency strategy, advises Mark Lafferty, director of strategic solutions and services with CDW (www.cdw.com).

"Other than the actual IT devices, cooling equipment is usually the second

Key Points

- Develop proper sizing of data center space, either by using only as much room as needed or by utilizing curtains and other containment products.
- Implement efficient storage systems, thinking of energy efficiency with both hardware and software solutions.
- Create benchmarks of existing power consumption and the amount of heat currently produced.

into fewer UPS units. Lafferty notes that these units operate at higher capacities, usually with over 90% energy efficiency.

"Many IT departments over-engineer the UPS to accommodate future growth, and as such, maintain the UPS at about 20% capacity," he says. "When a UPS has a lower capacity, its energy efficiency can drop from the 80% range down to 50%. This wasted energy can quickly add up, especially with three-phase units in the high kilowatt/megawatt capacities."

Establish Benchmarks

According to Lafferty, energy efficiency in the data center depends on three necessary items: analyzing power consumption at the rack level, understanding where the hot spots are, and managing UPS loads by way of physical infrastructure. Data center physical infrastructure software has the ability to capture this information from the UPS, networked power distribution units, cooling units, and environmental monitoring devices, all within a single interface.

Without established benchmarks of existing power consumption and the amount of heat currently produced, it's very difficult for any kind of future planning regarding increased electrical efficiencies, Lafferty believes. He says, "Understanding and managing the existing power and cooling needs of a data center is the first step every IT department should take when aiming to maximize energy efficiency."

“IT departments that implement row-based cooling can realize efficiency gains in the neighborhood of 30%.”

-CDW's Mark Lafferty

case, Heimerl recommends subdividing the space and using environmental controls only in what's being used. Curtains and other containment products can help size a space appropriately.

Once you've established a reasonably sized data center, you should also maintain a reasonable temperature. Although some data center managers believe that colder is always better, that attitude can lead to inefficiency, notes Heimerl. He recalls one of the company's clients, an IT manager who kept his data center at 54 degrees because the center had the cooling capacity available.

"Maintaining this temperature was a waste of power," says Heimerl. "It actually made humidity control harder due to condensation issues and resulted in degenerated support because none of the IT people wanted to spend any time in the data center because it was too cold. There were actually times that some IT staff brought portable heaters into the data center with them when working on equipment for any period of time."

Heimerl also advises that clients run a "lights out" data center when appropriate. If there are no staff in the data center, there's likely no need for continuous lighting. Lights draw more power and generate heat. But data center managers should make sure that there's adequate lighting available so support staff can work in safe conditions.

most power-hungry element within a data center," he says. "IT departments that implement row-based cooling can realize efficiency gains in the neighborhood of 30%." He adds that by positioning cooling units closer to hot spots, perimeter-based cooling units will not have to work as hard to maintain a lower temperature for the entire data center.

Known as UPS consolidation, another best practice is to combine IT equipment

Best Practices Quick Hits

According to Mark Lafferty, director of strategic solutions and services with CDW (www.cdw.com) and Jon-Louis Heimerl, director of strategic security at Solutionary (www.solutionary.com), here are some additional, important tweaks an SME can make in creating an energy-efficient data center.

- Use metered power strips, because they enable IT departments to determine actual loads per rack, giving managed power distribution units the ability to shut down IT devices during slower or nonbusiness hours.
- Put a temperature sensor in every rack or every other rack to report hot spots more accurately.
- Run devices on 208V power while using three-phase power distribution to the racks. This will reduce the heat generated when stepping the power down to 120V.
- Place blanking panels in empty rack spaces.
- "Right size" cooling and UPS units during the planning phase of a server virtualization project.
- Replace older hardware with newer, more energy-efficient equipment; this goes for computer hardware as well as HVAC systems.
- Properly maintain all HVAC units and any external venting or cooling units to make sure they're in optimal operating condition.

USED & REFURBISHED EQUIPMENT SPOTLIGHT

Remember Return Policies

What To Know Before You Buy

by Julie Knudson

PURCHASING REFURBISHED data center equipment doesn't always work out the way you planned. Whether it's an item that's dead out of the box or a component that arrived damaged, you want to know that any problems will be handled quickly.

"There is a big challenge in the refurbished computer business," says James Davie, co-founding partner at Canvas Systems (www.canvassystems.com), "and that is, are people going to back up the equipment they're selling?"

Knowing how a supplier handles returns is an important factor in any purchase decision. Below are some guidelines to keep in mind as you shop for refurbished equipment.

Know your reseller. Warranties are only as good as the company offering them, so make sure you do your homework. "A lot of people in the refurbished market are working out of their garages, and whether they'll be there next week or not is up in the air," says Rahul Pinto, senior director of professional services at Recurrent Technologies (www.recurrent.com). Reputable companies provide faster turnaround on advance replacement exchanges. They also may waive

restocking fees, and they offer better support options.


Refund or credit? Even if a supplier accepts your returned equipment, you might not get your money back. "A lot of companies offer returns, but when they do, it isn't actually a return for cash value, it's a return for credit," Pinto says. Just like retailers that only offer in-store credit, some resellers don't give refunds. It's important to understand your options, especially if your equipment purchases are infrequent—your money could be tied up until you find something else you need to buy.

Ask about restocking fees. Equipment that's returned for reasons other than damage or defects may incur a restocking fee averaging about 15 to 20%. "Some [vendors] stipulate on a sales quote or invoice that there are restocking fees," Pinto says. But don't assume you're stuck paying them: "Most companies, just to ensure business continuity with customers, will waive those fees." If you're a regular customer, see if your sales rep can remove the charge.

Understand what isn't covered. Warranty and exchange policies often don't cover issues such as damage caused by the end user or a force majeure. "In those cases,

customers need to have some type of disaster recovery service in place," Davie says. Part of that service could include getting items on quick ship from your reseller, because, he says, "You're essentially looking for a temporary or long-term replacement." Knowing what isn't covered under warranty will help you determine what kind

of disaster recovery help you might need and what it will cost.

Don't recycle that packaging yet. Before you assume it's safe to toss the original packing material, find out if you'll need to hold onto it until your warranty period expires. Some suppliers won't accept returns unless they're in the original packaging, while others are less picky. "With [most of] the quality refurbished integrators out there, you just need to get the product back in the condition it was sent in," Davie says. Customers should ask about the requirements when making their purchase so that a return isn't refused because someone inadvertently pitched the original box. 

Find Used & Refurbished Equipment For Sale

Once you've made the decision to purchase used or refurbished equipment, finding the equipment you need is easy with *Processor's* online *Data Center Products For Sale Database*.

From *Processor's* home page (www.processor.com), you can search for a specific part number, make, model, or description. Enter the information in the appropriate box and click Search. You'll see a list of available equipment. If you don't see the particular piece you're looking for, scroll to the bottom of the search results page to conduct a more detailed search. There, you can search by part number, model, price, location, and more.

Don't know the specific part number or model? Use the drill-down search on the *Processor* home page to view results from specific manufacturers. Simply click the manufacturer name, and you'll see a list of all equipment listings from that manufacturer.

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Study Shows That “The Cloud” Baffles Midmarket

Cloud computing has been gaining an ever-increasing presence in today’s small to mid-sized enterprises. But in spite of its increased use, many in the IT field seem to still not have a handle on just what “the cloud” is.

Virtacore Systems recently conducted an email survey of 210 midmarket organizations with 100 to 1,000 employees, asking about cloud adoption and cloud perceptions. Among the findings? About 64% of all respondents answered “no” to the question, “You’ve heard the buzz about the cloud—do you feel you understand what it means?”

The survey included responses from both general business (69%) and IT (31%) employees. Among the respondents who say they specifically work on the IT side of operations, understanding of what the cloud means was slightly better, with 48% saying they don’t fully understand what the cloud means.

Knowledge Of Cloud Apps

The Virtacore survey also examined knowledge of specific cloud-based applications. When asked which Web-based applications their businesses used, such as Gmail, Google Docs, or several other leading cloud-based applications, 61% said they used none. Among respondents whose companies do use Web-based apps, 54% did not recognize the apps as being cloud-based.

Kevin Burke, vice president of sales and marketing at Virtacore Systems, attributes this to “confusing information out there about the cloud and what the cloud is.” Web tools “are not always advertised as the cloud, and midmarket companies may think the cloud is more complicated than these apps.”

When it comes to the use of cloud-based apps and services, 47% of respondents say lack of funds is the primary reason their businesses do not use the cloud. Just 25% of those surveyed see the potential for the cloud for their businesses, and 26% say they don’t know its potential. Such findings point to a lack of understanding about the cloud’s benefits among midmarket enterprises, Burke says. “When companies are properly educated on the cloud, they become more aware of the cost benefits associated with the technology. Although implementing cloud offerings would take additional budget, the savings [it] provides would offset these costs.”

by Patrick Kean



Planning Not To Fail

Set A Strategic IT Plan

by Jean Thilmany

• • •

TECHNOLOGIES SUCH AS VIRTUALIZATION and cloud computing let data centers quickly and inexpensively deploy new IT resources. But that quick and cheap mentality can cause a lot of damage if no one thinks strategically about the long-term plan and how new implementation will affect other resources.

A long-term strategy is a must. Setting the strategy usually falls under the IT or data center manager’s purview. That person is also charged with selling new deployments to executives, which is easier done when it fits in with both the long-term IT and the long-term business plan, says Laura Pettit Rusick, president of OPT Solutions (www.optolutionsinc.com).

Connect To The Business Mission

The manager in charge needs to consider how best to think long-term in today’s environment, which calls for virtualization, cloud computing, and other technologies that have an effect on the physical infrastructure.

To set the long-term plan, begin by thinking strategically, Rusick says. First, look at your enterprise’s business mission and its

Key Points

- Consider the enterprise’s business goals—not just IT goals—when thinking strategically about data center implementation, whether virtual or physical implementation.
- IT managers should be prepared to make a monetary case for new technology.
- To get executive buy-in, tie IT implementation with business goals.

managers should first look at how to leverage existing in-house solutions, Rusick adds.

Rollout Considerations

Just as enterprise executives plan long-term when setting business strategy, IT managers should plan long-term when considering major rollouts, says Steve Shalita, vice president of marketing at NetScout Systems (www.netscout.com).

He advises managers to first consider the high-level implementation and then drill down by outlining the individual steps that need to be taken to get there. This manner of planning also helps IT managers plan strategically even in terms of cloud and virtualization technologies, he says.

“If my task is to consolidate three or four data centers into two, I’d need to determine what are the traffic patterns and user issues and response times at each center, and how I could best engineer the two centers based on these profiles.”

- NetScout Systems’ Steve Shalita

overall long-term business strategy and determine how best to meet it from an IT perspective, Rusick advises.

You’ll need to extrapolate IT plans out over several years for long-range planning purposes, so consider how the cloud and a virtual environment will affect your physical environment. But more importantly, remember to always cleave closely to the business strategy. This advice—tying IT and enterprise business mission and strategy to IT mission and strategy—helps when selling IT implementation to executives even if the strategy includes unknowns, like a move to the cloud, she adds.

Rusick says IT managers should ask themselves the following questions when considering proposed technology implementations:

Will the technology need to be scaled in the near future, and how easy will that be? Do you require virtual servers or machines for scaling, and how will that affect infrastructure needs? How much uptime is needed for the proposed technology? How many applications will the new implementation, such as a server environment, run? How critical will the new technology be to the enterprise function? What’s the best way to get there, small implementation steps or in one fell swoop?

The answers to these questions will help when setting up a long-term business and IT strategy, Rusick says. It will also help when considering how many virtual servers will be necessary in the future. But before looking to bring in new technologies, IT

This process of planning calls for monitoring present-day systems to truly understand what’s happening within a data center or an IT department. IT managers can use this detailed information when considering a move to the cloud, to virtual servers, or to physical data center expansions and consolidations, Shalita says.

Take, for instance, a new data center implementation. “It comes down to understanding the issues [and] understanding what you’re dealing with at an application and infrastructure traffic volume level and data structure so you can plan efficiently,” Shalita says.

“If my task is to consolidate three or four data centers into two, I’d need to determine what are the traffic patterns and user issues and response times at each center, and how I could best engineer the two centers based on these profiles,” Shalita says.

Laurent Duperval, president of Duperval Consulting, urges managers to continually measure the effectiveness of present IT implementations by monitoring their current technology. That way, they’ll have access to data that will help with future decision making and with selling higher-ups on new implementations. Ineffective monitoring will make for ineffective IT tactics when it comes to planning future rollouts, whether virtual or physical, Duperval says.

Information returned from data center monitoring can also help when considering moves to virtual environments and when planning to scale data centers and resources, says Josh Stephens, vice president of

technology at SolarWinds (www.solarwinds.com), a maker of IT management solutions.

Make The Case

Managers must always consider how they’ll sell the strategy and any new resources called for to the executive staff, says Jill Billhorn, vice president of small business sales at technology solutions provider CDW (www.cdw.com).

IT managers must understand a company’s overall business strategy and goals when making recommendations for investment in IT, Billhorn says. To understand that strategy, she calls for a seat for IT managers at the executive planning table. In this way, IT managers can also explain to executives how their own IT technologies can help meet business strategy. “Particularly, for a business focused on both realizing cost savings while simultaneously increasing productivity, IT professionals must identify and recommend solutions suited to achieving those ends,” Billhorn says.

The best way to get executive buy-in for projects proposed by the IT department itself is to tie the proposed technology implementation to business initiatives, business mission, and long-term plans, OPT Solutions’ Rusick says. For instance, she

says, for an enterprise that has multiple locations, it might make sense to turn to cloud computing for server capabilities.

“For a business continuity side, you’d make the case that this is an environment where you can pay a small amount every month for services, but rapidly torque up if you need to,” Rusick says. “There’s a huge money savings there.”

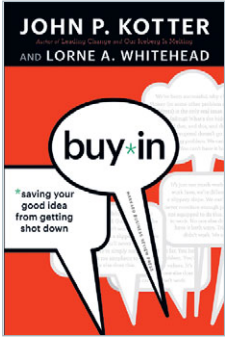
Rusick also says to make the monetary case for new technology implementations. That means making the case within the IT department and to executives. If IT managers know a new implementation will pay for itself or is simply a good investment, they’re thinking strategically and have likely made a sound decision, Rusick says.

Roadmap To Success

The best way to set out a strategic IT plan is to develop a roadmap that charts how expenditures on specific IT solutions drive measurable value and assist enterprises in reaching their long-term goals, says Jill Billhorn, vice president of small business sales at technology solutions provider CDW (www.cdw.com).

Not only does such a roadmap help IT managers connect the importance of their IT solutions to their organization’s bigger picture, Billhorn says, it also helps when making the case for funding the solution. If they can visually tie IT expenditure to enterprise goal, “then it’s highly likely the case for investment will be made,” she says.

BOOK REVIEW



Make Your Case

Buy-In: Saving Your Good Idea From Getting Shot Down

Authors: John P. Kotter and Lorne A. Whitehead
Publisher: Harvard Business Press
Price: \$22
Format: Hardcover, 208 pages

by Kurt Marko

CREATIVE IDEAS CAN BE a dime a dozen, yet according to business professors John Kotter and Lorne Whitehead, authors of “Buy-In: Saving Your Good Idea from Getting Shot Down,” most of them are shot down before they’re ever tested. And, as the subtitle of their book suggests, they have a strategy for increasing the probability of seeing good ideas come to fruition.

Persuasion & Influence

Unlike other books on the art of persuasion and influence, the authors don’t advocate steamrolling and silencing adversaries as quickly as possible. Rather, they counsel respectfully engaging attackers, letting them make their case, and responding in a clear but measured tone. Although the authors avoid military metaphors, the goal is to win the war, not a few skirmishes. Hence, their counterintuitive approach isn’t designed to convince intractable

skeptics, but rather the less dogmatic majority of stakeholders. The authors’ technique of directly confronting critics and offering courteous, clear, common-sense responses allows the advocate to win both the emotional and rational elements of the debate. The authors use narrative to introduce their technique, crafting a hypothetical story of a town library board meeting convened to discuss a new fundraising proposal during which the beleaguered proponent contends with a veritable “greatest hits” of idea-killing attacks. Like all fairytales, this has a happy ending as the protagonist successfully employs the “Buy-In” strategy to diffuse each objection and win over the majority, nicely illustrating the techniques in a plausible series of dialogues.

Deconstruct Arguments

The book’s second half deconstructs the arguments and response techniques by outlining the four primary strategies of attack (fear mongering, death by delay, sowing confusion, and ridicule or character assassination). The book then delves into the 24 most common questions or arguments employing these strategies, and the main elements of counterattack and refutation (gain people’s attention by engaging the attackers; win their minds with simple, commonsense response; win their hearts by showing respect; and speak to the crowd, not the attacker). Although the authors’ approach is sound and supported by empirical research, it’s easier said than done. Thus, their final piece of wisdom is the importance of debate preparation by brainstorming expected lines of attack and developing specific responses

New & Upcoming IT Book Titles

“Data Center Storage,” by Hubbert Smith. Demands for storage seem insatiable, but just expanding legacy architectures is costly and inefficient, leading to evermore wasteful overspending on storage. This book analyzes where storage inefficiencies lurk and how data centers can increase useful capacity and improve service levels and performance while lowering cost.

“Essentials of Online payment Security and Fraud Prevention,” by David Montague. As companies move more of their business transactions online, they become a bigger target for cybercriminals, fraudsters, and identity thieves who see the Internet as a lucrative new frontier. This book offers a primer on how to make an e-commerce system both reliable and secure.

“Content Rules: How to Create Killer Blogs, Podcasts, Videos, Ebooks, Webinars (and More) That Engage Customers and Ignite Your Business,” by Ann Handley and C.C. Chapman. Companies increasingly see online social networks as an effective new medium for engaging with customers, marketing products, and promoting their brand. This book provides a guide for creating compelling online content that resonates with customers and compels them to share it with their social circle.

based on their strategic principles. For those who have faced the frustration of having seemingly sound ideas ambushed and summarily dispatched, “Buy-In” outlines a form of defense that can deflect attackers and engage the convincible. [P]



Processor Solutions Directory

Here are brief snapshots of several companies offering products designed for the data center and IT industry. Listings are sorted by category, making it easy for you to find and compare companies offering the products and services you need.

You can find more detailed information on these companies and the products they offer inside this issue.

To list your company and products, call (800) 247-4880.

PHYSICAL INFRASTRUCTURE



AVTECH Software, founded in 1988, is focused on making the monitoring and management of systems, servers, networks, and data center environments easier. AVTECH provides powerful, easy-to-use software and hardware that saves organizations time and money while improving operational efficiency and preparedness. AVTECH products use advanced alerting technologies to communicate critical status information and can perform automatic corrective actions.

Products Sold:

A full range of products that monitor the IT and facilities environment, including temperature, humidity, power, flood, room entry, and UPS

(888) 220-6700 | www.AVTECH.com

PHYSICAL INFRASTRUCTURE



BayTech was founded in 1976 and, since the 1990s, has developed unique products for remote power management. The company uses printed circuit board instead of wires for a better, more resilient connection between the data center equipment and the receptacle. BayTech provides an extensive Web site with brochure downloads, warranty information, and reseller support and also offers evaluation units for data centers.

Products Sold:

- Power control, distribution, management, and metering
- Power transfer switches
- Console management and remote site management

(800) 523-2702 | www.baytech.net

PHYSICAL INFRASTRUCTURE



Cyber Switching is an innovator and manufacturer of power management solutions used to distribute power throughout an entire data center, from the building infrastructure to the rack level. Cyber Switching products provide companies with quality power data throughout the data center, enabling them to make sound, informed decisions regarding their power grid. Located in San Jose, Calif., Cyber Switching began pioneering power distribution technologies in 1994 and continues to design and develop innovative and technically advanced power solutions such as the ePower, PM8, Dualcom S, EMC, Galaxy Series, E Series, and PS Series.

Products Sold:

- Intelligent power management
- Value-added power management
- Metered power distribution
- Three-phase power distribution
- Energy management and control
- Switches

(888) 311-6277 | www.cyberswitching.com

PHYSICAL INFRASTRUCTURE



A Gaw Associates, Inc. Company

Data Center Depot prides itself on providing the best selection, pricing, and support for data center products. Our diversified product line can meet the specific needs of data center managers responsible for virtually any type of corporate setup. We are a major manufacturer and also distribute the product lines for top companies in the industry. Most of our products are available via our online store, but we encourage you to contact us so we can help you find the right products for your requirements and budget.

Products Sold:

- Data cabinets, racks, and accessories
- LAN and NOC furniture
- Consoles and monitor walls
- Power supplies
- Cable ladders
- Patch panels
- Storage furniture

(877) 429-7225 | www.DataCenterDepot.com

PHYSICAL INFRASTRUCTURE



TECHNICAL WORKSPACE SOLUTIONS

Based in New York City, Hergo Ergonomic Support Systems is an independent designer and manufacturer of enclosure cabinet solutions, technical computer furniture, and modular racking systems. The company's products are designed to promote organization in the workspace and to increase the productivity of computers, peripherals, and communications equipment. Hergo is known for its high-quality products and superior customer service.

Products Sold:

- Racks
- Enclosures/cabinets
- Motorized workstations
- Flat-panel arms
- Computer desks
- Cable management
- Power management

(888) 222-7270 | www.hergo.com

PHYSICAL INFRASTRUCTURE



by iStarUSA Group


Claytek, part of iStarUSA Group, is a leading provider of server cabinets, racks, and related accessories. Since its founding in 2005, Claytek has grown tremendously because of reliable and innovative design and product quality. In addition, customers find that Claytek offers some of the most affordable solutions the market has to offer.

Products Sold:

- Cabinet enclosures
- Wallmount solutions
- Open-frame racks
- Special applications
- Rack- and cabinet-related accessories

(626) 303-8885 | www.istarusa.com

PHYSICAL INFRASTRUCTURE




Founded in 2008, Minneapolis, Minn.,-based Packet Power focuses on making it easy to get the information data center managers need to become more energy efficient. The company's smart power cables gather detailed energy consumption data and transmit it wirelessly for analysis and reporting. The system installs in any combination of rack and device levels, without an electrician and without disruption to the existing power infrastructure. It easily tracks power usage by customer, application, device or circuit.

Products Sold:

- Wireless power and temperature monitoring

(877) 560-8770 | www.packetpower.com

PHYSICAL INFRASTRUCTURE



Established in 2008, PDUdirect.com is an online wholesaler providing a select line of PDUs for server and networked environments. PDUs Direct's basic, metered, and switched Rack PDUs provide local and remote power management, power monitoring, and environmental monitoring. We pride ourselves in offering industrial-grade quality products at the lowest prices, with the fastest shipping (most orders shipped within 24 hours) and simplest purchase process.

Products Sold:

A complete line of 20A PDUs, including metered, basic, and switched.

(888) 751-7387 | pdusdirect.com

PHYSICAL INFRASTRUCTURE




RackSolutions has been serving the data center market for more than 10 years. All of our products are designed, engineered, built, and shipped under our own roof. We have product solutions available for every major OEM, but if one of our existing products doesn't fit your needs, our top-notch mechanical and electrical engineers can create the item you need from scratch, solving even the toughest installation design challenges. Best of all, we typically don't charge up-front fees for design services.

Products Sold:

Computer server racks, cabinets, shelves, and mounting products.

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PHYSICAL INFRASTRUCTURE



Rackmount Solutions' mission is to listen to the IT engineer's specific needs and deliver superb-quality, high-performance products through continuous product innovation and operational excellence. We pride ourselves in providing quality customer service, products that fit your IT requirements, and solid value for your money.

Products Sold:

- Wallmount and server racks and cabinets, including sound proof, air conditioned, and large cable bundle
- Desktop/tabletop portable racks
- Shockmount shipping cases
- Bulk cable

(866) 207-6631 | www.rackmountsolutions.net

PHYSICAL INFRASTRUCTURE



Sealeze has been providing high quality brush products and services for more than 25 years. Our goal is to exceed your expectations for service and quality. To make that possible, we manufacture all of our products in our factory in Richmond, Va., and operate under the ISO 9001-2000 Quality Management System to ensure we're manufacturing the highest quality product every time.

Products Sold:

- A complete line of brush seal products, including in-floor, surface mount, through-wall, and circular cable seals.

(800) 787-7325 | www.sealeze.com

PHYSICAL INFRASTRUCTURE



Sensaphone has been designing and manufacturing remote monitoring systems for more than 25 years and has more than 300,000 of its products in use. Sensaphone's product lineup offers a full range of devices with a broad number of features and applications designed to monitor your entire infrastructure and alert you to changes. All product engineering functions, including hardware and software design and circuit board layout and assembly, are performed at the Sensaphone facility in Aston, Penn.

Products Sold:

- Remote monitoring solutions that provide email and voice alarm notification for problems related to temperature, humidity, water detection, power failure, and more.

(877) 373-2700 | www.sensaphone.com

PHYSICAL INFRASTRUCTURE



Server Technology is committed to the PDU market with the largest group of engineers dedicated to power distribution and other solutions within the equipment cabinet. Advancements in device power monitoring help data centers monitor and improve their efficiency, and continuous research and development is fueled by companies that look to Server Technology for their custom cabinet power solutions.

Products Sold:

A complete line of cabinet PDUs, including Per Outlet Power Sensing (POPS), Rack Mount Fail-Safe Transfer Switch, Console Port access with remote power management, Switched, Smart, Metered, Basic, and -48 VDC

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PHYSICAL INFRASTRUCTURE




Upsite Technologies was founded in 2001 to address data center needs for products and solutions reaching far beyond standard engineering and consulting offerings. The company innovates elegantly engineered products specifically designed to maximize data center airflow efficiency, improve PUE, and increase heat density. Upsite designs and manufactures the LOK family of products, which provides superior sealing, maximum energy savings, and the best protection available for your IT equipment.

Products Sold:

- KoldLok Grommets
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- HotLok Blanking Panels

(505) 982-7800 | www.upsite.com

NETWORKING & VPN



Talari Networks pioneered APN (Adaptive Private Networking) technology for WAN virtualization, enabling enterprises to overcome reliability and predictability issues with abundantly available public Internet bandwidth. With Talari, businesses can reduce WAN costs by 40 to 90% and increase bandwidth by using public connections to augment or replace expensive private ones, such as MPLS.

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The Mercury line of APN appliances for headquarters, remote office, data center, and SOHO deployments.

(408) 689-0400 | www.talari.com

STORAGE



DataRecovery.com (formerly ESS Data Recovery) was formed in 1996 as one of the first data recovery companies in the world. We have labs in Minnesota, Illinois, California, and Ontario, Canada, that service thousands of customers worldwide. We can work with almost any storage device, including large RAID arrays, data tapes, and any brand of hard drive.

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Using patent-pending application-identification technologies, Palo Alto Networks reinvented the network firewall to provide companies unequalled visibility and control over the applications and related data coming into and out of company networks. Without negatively impacting performance, Sunnyvale, Calif.,-based Palo Alto Networks' firewalls can identify and categorize over 950 applications and enforce access policies on a per-user or per-group basis. These firewalls also have integrated IPS and provide content scanning to defend against modern threats to the enterprise.

Products Sold:

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(866) 320-4788 | www.paloaltonetworks.com

SECURITY



ProQueSys, of Lebanon, N.H., is a privately owned developer of flow analysis software for network security, monitoring, and forensics. Named for the Process Query System correlation technology at the heart of its products, ProQueSys' goal is to make networks more understandable and transparent to the personnel tasked with running them. Its customer base includes government, industry, military, education, and business entities, including MSPs and ISPs.

Products Sold:

FlowTraq software, which helps you get a better understanding of your network's structure and traffic, providing vital information when something goes wrong.

(603) 727-4477 | www.proquesys.com

SECURITY



Secure MDE offers clients a mobile data elimination service, destroying hard drives and other media at customers' locations. The company's self-contained, high-capacity Secure Shark™ can be deployed at any facility across the country and is capable of shredding up to 1,000 hard drives an hour. Secure MDE is a subsidiary of Luminous Recycling, a leader in computer and electronics recycling. Luminous recycles 10 million pounds of electronic scrap annually.

Services Offered:

- High-capacity destruction of hard drives and other sensitive data

(888) 312-2333 | www.securemde.com

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When buying a server, you don't want a one-size-fits-all solution. Supermicro uses modular and interoperable Server Building Blocks to offer the highest levels of flexibility and customization possible to design servers tailored and optimized for your specific needs. Supermicro's focus on green computing leadership, system design expertise, and power-saving technologies ensures the products you purchase are energy-efficient and application-optimized.

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CLIENTS



Chenbro is a leader in enclosure solutions, selling its products primarily to system integrators and OEM and channel partners. The company's extensive research and development efforts help it to keep its competitive edge and maintain market leadership, with special focus on thermal, EMI, and acoustic solutions. Taiwan-based Chenbro has offices in the United States, UK, The Netherlands, and China.

Products Sold:

- A comprehensive line of PC chassis, server/workstation chassis, rackmount chassis, and HDD enclosures.

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CLIENTS



Maryland-based dtSearch started research and development in text retrieval in 1988. The company is known for speedy adoption of new programming standards, OSes, and file types. Plus, it has a flexible licensing model. Typical corporate use of dtSearch includes general information retrieval, Internet and intranet site searching, and email archiving and email filtering.

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(800) 483-4637 | www.dtsearch.com

CLIENTS



Giada Technology is a San Francisco, Calif.,-based PC and hardware retailer that specializes in mini PCs, motherboards, netbooks, graphics cards, and other computer hardware and peripherals. Giada has additional offices in both Shenzhen and Hong Kong, China, and distributes its products through Amazon, Polywell, ASI, MA Labs, and Newegg.

Products Sold:

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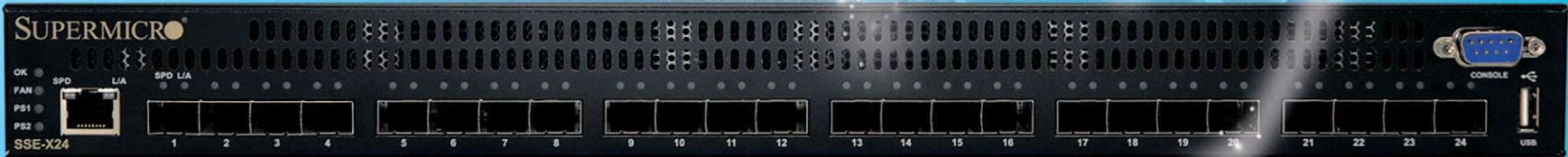
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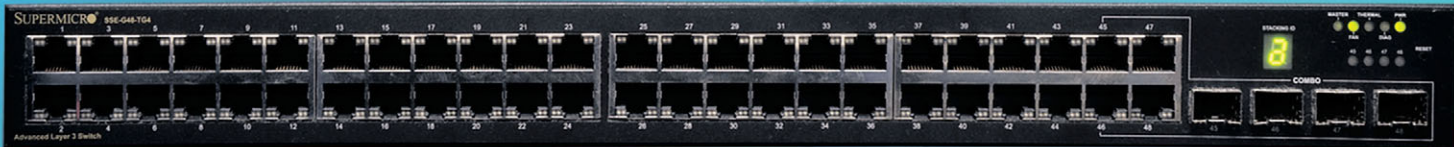
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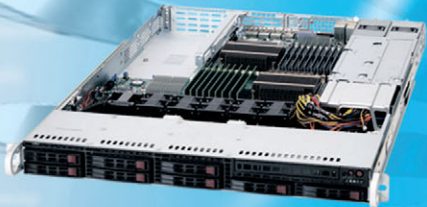
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